

UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE COMUNICAÇÃO E EXPRESSÃO
PÓS-GRADUAÇÃO EM LETRAS/INGLÊS E LITERATURA
CORRESPONDENTE

EFL READERS' TEXT COMPREHENSION: ASSESSING THE
EFFECTIVENESS OF ILLUSTRATIONS

RITA DE CÁSSIA SOBREIRA CLARO

Dissertação submetida à Universidade Federal de Santa Catarina em
cumprimento parcial dos requisitos para obtenção do grau de

MESTRE EM LETRAS

FLORIANÓPOLIS

Novembro/2010

Esta dissertação de Rita de Cássia Sobreira Claro, intitulada “EFL readers’ text comprehension: Assessing the Effectiveness of Illustrations” foi julgada adequada em sua forma final pelo Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, da Universidade Federal de Santa Catarina, para a obtenção do grau de

MESTRE EM LETRAS

Área de concentração: Inglês e Literatura Correspondente
Opção: Língua Inglesa e Lingüística Aplicada

Glória Gil, Ph.D.
COORDENADORA

Lêda Maria Braga Tomitch, Ph.D.
ORIENTADORA e PRESIDENTE

Celso Henrique Soufen Tumolo, Ph.D.
CO-ORIENTADOR

Sara Rejane de Freitas Oliveira, Ph.D.
EXAMINADORA

Raquel Carolina Ferraz D’Ely, Ph.D.
EXAMINADORA

Lincoln Fernandes, Ph.D.
EXAMINADOR SUPLENTE

Florianópolis, 26 de novembro de 2010

ACKNOWLEDGEMENTS

I would like to show my gratitude to everyone who, somehow, helped me to be here today.

Firstly, I thank my advisor, Dr. Lêda M.B. Tomitch, for accepting me as her audient student. I would not have started this program if she had not given me this chance.

To my co-advisor, Dr. Celso H.S. Tumolo, who gave important contribution to this study sharing his knowledge with comments and suggestions.

I thank my mother, Luzia Sobreira, for being my mother and father, always believing in my dreams to become true.

To all the professors at PGI, in particular professor Raquel d'Ely for her sense of humor and for being helpful, always encouraging our group.

To my husband, Renato, for being a partner, for supporting me and encouraging me during this journey.

To my supportive friends and colleagues, Claudia Winfield and Fabiana Almeida, for sharing thoughts, especially for being kind and patient with me.

To my very first colleague at UFSC, Donesca Xhafaj, who encouraged me in my first days.

I thank the examiners for having accepted to read my work.

To João Carlos from PGI.

Finally, I would like to thank all the teachers who allowed the data collection as well as the students/participants who took part in this study.

ABSTRACT**EFL READERS' TEXT COMPREHENSION: ASSESSING
THE EFFECTIVENES OF ILLUSTRATIONS**

Rita de Cássia Sobreira Claro

Universidade Federal de Santa Catarina

2010

Supervising Professor: Dr. Lêda Maria Braga Tomitch

Co-supervising Professor: Dr. Celso Henrique Soufen Tumolo

This empirical study investigated the effectiveness of illustrations on EFL readers' comprehension. The study was motivated by the need for further understanding of the topic, as signaled by several researchers in the field of Applied Linguistics. The methodological procedures adopted involved data collection from 13 participants from the English extra-curricular course at *Universidade Federal de Santa Catarina*, with a basic level of proficiency, which corresponds to the third semester of this course which comprises a total of six semesters. The participants were divided into three small groups and each group read the same text with a different approach, that is, PRG (Pre-reading group) performed a pre-reading activity with pictures before the reading of the text; WPG (With-picture group) read the text with pictures; and NPG (No-picture group) read the text without any pictures. The activities performed by the participants consisted of reading a text, an immediate recall task, a multiple-choice task and a retrospective questionnaire. A delayed recall task was performed one week after the first encounter. Data were analyzed both quantitatively and qualitatively examining results from the recall tasks, the multiple-choice task and the retrospective questionnaire. This study's findings indicate a facilitative effect of illustrations when taking into consideration the use of pictures as support in a pre-reading activity. The WPG showed better results in the delayed recall when compared to the immediate recall task. Overall

results suggest that the facilitative effect of illustrations may assist EFL readers to recall relevant information, which could be helpful for text comprehension for basic level proficient readers.

Keywords: illustrations, reading comprehension, pre-reading activity.

RESUMO

COMPREENSÃO LEITORA DE ALUNOS DE INGLÊS COMO LÍNGUA ESTRANGEIRA: AVALIANDO A EFICÁCIA DE ILUSTRAÇÕES

Rita de Cássia Sobreira Claro

Universidade Federal de Santa Catarina

2010

Professora Orientadora: Dr. Lêda Maria Braga Tomitch

Professor Co-orientador: Dr. Celso Henrique Soufen Tumolo

Este estudo empírico investigou o efeito facilitador de ilustrações na compreensão de texto para leitores de inglês como língua estrangeira. O estudo foi motivado pela necessidade de maior entendimento do tema, tendo em vista ser um assunto atualmente abordado por vários pesquisadores do campo de Linguística Aplicada. A metodologia adotada envolveu a coleta de dados de 13 participantes do curso de inglês extra-curricular da *Universidade Federal de Santa Catarina*, com nível básico de proficiência, correspondente ao terceiro semestre do curso, o qual é composto por seis semestres. Os participantes foram divididos em três grupos pequenos e cada grupo leu o mesmo texto com uma abordagem diferente: O *Pre-Reading Group* realizou uma atividade pré-leitura com figuras antes de ler o texto; O *With-Picture Group* leu o texto com as imagens; e o *No-Picture Group* leu o texto sem imagens. As atividades realizadas pelos participantes consistiram em uma leitura de texto, uma tarefa de recordação de conteúdo imediatamente após a leitura, uma tarefa de múltipla escolha, um questionário retrospectivo; uma segunda tarefa de recordação do conteúdo foi realizada uma semana após o primeiro encontro. Os dados foram analisados tanto quantitativamente quanto qualitativamente, examinando-se os resultados das tarefas de recordação do conteúdo lido, os dados da tarefa de múltipla escolha e o questionário retrospectivo. Os achados deste estudo indicam um efeito facilitador das ilustrações na compreensão de leitura

quando levado em consideração o uso das imagens como suporte na atividade de pré-leitura. O grupo WPG mostrou melhores resultados no *delayed recall* quando comparado com o *immediate recall*. Os resultados gerais sugerem que o efeito facilitador do uso de ilustrações pode auxiliar os leitores de segunda língua (inglês) na seleção de informação relevante, o que pode ajudar na compreensão de texto para alunos/leitores com nível básico de proficiência.

Palavras-chave: ilustrações, compreensão leitora, atividade de pré-leitura.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	v
ABSTRACT	vii
RESUMO	ix
TABLE OF CONTENTS	xi
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
CHAPTER I - INTRODUCTION	1
1.1 Research Questions.....	2
1.2 Significance of the Research	3
1.3 Organization of the thesis	4
CHAPTER II - REVIEW OF THE LITERATURE	5
2.1 An overview of the reading process	5
2.2 Schema Theory and Pre-reading activities	8
2.3 The role of Illustrations for EFL reading comprehension .	10
2.3.1 The Dual Coding Theory	19
CHAPTER III - METHOD	21
3.1 Participants	21
3.2 Instruments	21
3.2.1 Instructional Text	22
3.2.2 Informed Consent Form	23
3.2.3 Free Immediate Recall	23
3.2.4 Multiple-choice test	24
3.2.5 Retrospective Questionnaire	24
3.2. 6 Free Delayed Recall	24
3.3 Design of the Study.....	25
3.4 Procedures	26
3.4.1 Phase 1 – Immediate Recall Task	26
3.4.2 Propositional Scoring	27
3.4.3 Phase 2- Delayed Recall Task	29
3.5 Pilot Study	29
3.5.1 Pre-pilot study	29
3.5.2 Pilot Study	30
CHAPTER IV - RESULTS AND DISCUSSION.....	31
4.1 Free Immediate Recall	31
4.2 Multiple-choice Test	35

4.3 Free Delayed Recall36
4.4 General Results: Immediate Recall x Delayed Recall.....40
4.5 Retrospective Questionnaire46
4.6 Readdressing the Research Questions51

CHAPTER V - FINAL REMARKS, LIMITATIONS

AND IMPLICATIONS54
5.1 Final Considerations54
5.2 Limitations of the Study and Suggestions for
Further Research55
5.3 Pedagogical Implications56

REFERENCES57

APPENDICES

Appendix A60
Appendix B62
Appendix C65
Appendix D66
Appendix E67
Appendix F69
Appendix G70
Appendix H71
Appendix I72
Appendix J75

LIST OF TABLES

Table 1 – Main and secondary propositions: Raters’ categorization	28
Table 2 – Main propositions: Score sheet	28
Table 3 – Secondary propositions: Score sheet	29
Table 4 – Free Immediate recall: Main propositions per group.....	31
Table 5 – Free Immediate recall: Secondary propositions per group	33
Graph 1 – Immediate Recall: General Results	33
Graph 2 – General Results: Multiple-choice task	35
Table 6 – Delayed Recall – Main propositions: Average per group	37
Table 7 – Delayed Recall – Secondary propositions: Average per group	37
Graph 3 – Delayed Recall: General Results	38
Graph 4 – Free Immediate Recall x Free Delayed Recall: General Results.....	42
Table 8 – Retrospective Questionnaire	49

LIST OF FIGURES

Figure 1 - Description of the pulley system used in the experiments by Hegarty & Just (1993)14

Figure 2 - Part of the illustration describing notions of physics. Gyselinck (1995).....15

Figure 3 - Illustration of a pump system. (Adapted from *The World Book Encyclopedia*, Vol. 15, p. 794, 1987).....17

CHAPTER I

INTRODUCTION

No one is an artist unless he carries his picture in his head before painting it, and is sure of his method and composition.”
(Claude Monet)

Being regarded as one of the greatest sources for building knowledge, reading has played an important role for the learning processes in both L1 and L2. In the past few years it has been a source of linguistic input for foreign language learning due to the pervasiveness of texts found in magazines, books, and online material available for all kinds and levels of readers.

The progressive inclusion of illustrations to accompany such texts has been one of the most important aspects in the area, which may contribute to the process of comprehension and retention of text content in both L1 and L2. This contribution has been the subject of several studies and has brought the role of illustrations for discussion during the last decades.

Several researchers have argued that the use of illustrations such as images, graphics or diagrams facilitates comprehension (e.g., Paivio, 1986; Glenberg & Langston, 1992; Hegarty & Just, 1993; Gyselinck & Tardieu, 1995). Regarding this issue, Gyselinck and Tardieu (1995) have attempted to explain in which circumstances the use of pictures may facilitate comprehension. The authors have drawn attention to the extent readers are able to make inferences, a process which takes place during text comprehension, through the representation of a text followed by an illustration.

Glenberg and Langston (1992), who conducted a study based on the mental model construct, propose that the integration between pictures and text during comprehension help readers to better construct an “image” of the text, assisting in the construction of mental models. Even though the present research does not focus on “what goes on in the reader’s mind” specifically, it is also relevant to take the issues related to the field of memory and inference making into account since it affects the learning process while reading comprehension takes place. In this sense, the authors argue that pictures help people to generate important

inferences. According to results in their study, pictures help people to comprehend and remember text.

Regarding the effects of illustrations as support for pre-reading activities, the present study also draws on Tomitch (1999), who conducted a study to investigate the effectiveness of pre-reading activities for L2 reading comprehension. Her results showed that pre-reading activities enhanced comprehension for intermediate level students, findings which corroborate previous research (e.g., Hudson, 1982; Tagliebier, 1985).

In addition to the studies aforementioned, the use of illustrations¹ and their facilitative role in reading has also been discussed by the dual coding theory, developed by Paivio (1986). This author attempts to give equal values to verbal (language) and nonverbal (mental imagery) systems of cognition. According to the theory, when information is presented both verbally and visually, there is a greater chance of being remembered, and more effectively recalled.

Because illustrations in general have been considered effective to facilitate readers' comprehension of a text in the L1, they may significantly assist the comprehension abilities of L2 readers. Therefore, based on the studies aforementioned and on the assumption that illustrations facilitate comprehension, the purpose of the present study is to investigate the effectiveness of illustrations in facilitating text comprehension of EFL readers. More specifically, this study intends to investigate the extent to which the use of L2 texts with illustrations, affect EFL readers' immediate and delayed recall when they are presented with a pre-reading activity. For doing so, an experimental study was carried out with a group of Brazilian students of English with a basic level of proficiency. They were attending classes at the Extra-Curricular course at UFSC.

1.1 RESEARCH QUESTIONS

Having stated the main purposes of this study, the questions investigated through this research were:

- 1- Does the use of illustrations produce better recall, for both immediate (right after reading) and delayed recall (one week after the encounter)?

¹ Illustrations are to be defined as visual tools such as pictures, images, graphics and diagrams when placed next to the written text. Therefore, for the purpose of this study, the term "illustration" is being used as an umbrella term.

- 2- Does the use of text accompanied by illustrations produce better comprehension, as measured by multiple choice questions?
- 3- To what extent do pre-reading activities, with illustrations, facilitate comprehension of L2 readers with a low level of proficiency?

Thus, the main assumption in the present study is that illustrations, both as support and as part of a pre-reading activity, facilitate text comprehension for EFL readers, with basic proficiency levels.

1.2 SIGNIFICANCE OF THE RESEARCH

The motivation for this study is the interest in procedures within the reading field regarding texts *with* versus *without* visual aids, particularly because of this researcher's previous experience with the use of illustrations with adults in EFL regular classes and young learners from elementary school. In several opportunities in my teaching experience, it appeared that when illustrations were presented along with the text, they seemed to have assisted the students to better understand the main subject discussed in L2. In addition, in those cases, the use of illustrations showed to be effective enough for the reading comprehension when a preceding activity to elicit the subject of the text was applied.

The significance of the study is that the results may lead to a better understanding of the effectiveness of illustrations in facilitating reading comprehension in a second language, specifically when used as a pre-reading activity. Moreover, it may contribute to the EFL reading pedagogy, since the findings may shed some light on how reading comprehension activities, which may or may not include illustrations, may be applied in EFL reading classes in the first years of language courses. Based on the fact that the area of reading research in L2 has been a field of interest, this researcher has attempted to analyze issues concerning L2 text comprehension considering the need for more studies regarding this field. In other words, whether and to what extent the use of illustrations per se and the use of illustrations as pre-reading activities may assist EFL students who are learning English when they are considered basic proficient readers. Therefore, the ongoing debate on text comprehension with illustrations in L2 may be enhanced.

1.3 ORGANIZATION OF THE THESIS

This thesis is organized in five chapters as follows: Chapter I presents the introduction, the objectives, the research questions, the significance of the research and the organization of the dissertation. In chapter II the review of the literature concerned with reading comprehension and the role of illustrations for reading comprehension is presented. Chapter III describes the method and procedures for data collection. Chapter IV discusses the results and the conclusions of the study. Finally, chapter V presents the final considerations, the limitations of the study, pedagogical implications as well as suggestions for future research.

CHAPTER II

REVIEW OF THE LITERATURE

The main objective of this chapter is to present the review of the literature relevant for this study. For that, in the first section (2.1) an overview of reading models is given, and a discussion of the process in which reading comprehension may take place as a result of the interaction of several sources is presented. Next, in the same section some sub-processes involved in text comprehension are presented, including both lower-and higher-order processes as described by Gagné et al (1993), followed by the contribution on the mental processes by Kintsch & van Dijk (1978). The second section (2.2) discusses the importance of schema theory and pre-reading activities for comprehension. In the third section (2.3) some of the important studies on the contribution of illustrations for reading comprehension are discussed.

2.1 An overview of the Reading Process

Reading has been approached as a cognitive activity and several researchers in the field of psychology have constructed models which discuss assumptions attempting to explain processes that may occur during the reading activity. As regards the three major models found in the literature, bottom-up, top-down and interactive models give support to the issues in reading comprehension for both first and second language and as such they also give some support for better understanding the issue of the use of illustrations in EFL reading.

The bottom-up model, suggested by Gough (1972, 1992, as cited in Davies,1995) explains reading as a process which occurs from the lowest to the highest level, that is, the reader starts from letter-word recognition, then sentences and finally the whole text can be comprehended. Thus, reading comprehension would take place only after this step-by-step process is completed. Such process can be defined as serial and linear.

According to the top-down model, on the other hand, the process of reading is explained as a “psycholinguistic guessing game”, once it is suggested that the reader can make assumptions on what the text is about and therefore, make inferences (Goodman 1970, 1988), as cited in Davies,1995). The model refers to a reader who is able to make

predictions before going over the text, constructing meaning along with the linguistic surface encoded by the writer.

Considered an alternative to bottom-up and top-down models, Rumelhart's interactive model (1977) gives a more encompassing view on the reader's behavior. This model predicts that the reading process occurs in parallel so that both lower and higher level processes interact, allowing the possibility to simultaneously process several sources of information such as: visual, orthographic, lexical, semantic, syntactic and schematic. This model reinforces the importance of using more than one source of information for reading comprehension. The reader is able to activate his/her background knowledge by making predictions. The interactive model has been recognized as the model which tries to explain more issues concerning reading comprehension than the models which refer to the activation of only one source as suggested in the bottom up and top down models. Because this model takes into account the contribution of different sources of information in text comprehension, so that comprehension is achieved, this view is adopted for discussion in relation to the role of illustrations in this study.

Another aspect that must be taken into consideration is in relation to the individual differences. For that, the Interactive models, when combined with a compensatory process (Stanovich, 1980), may provide better explanation for the existing indication that, readers with low proficiency level tend to focus on other sources rather than the linguistic. Low level readers use such strategy in order to achieve comprehension by inferring what is not stated in the text. A major pedagogical challenge in this field is to help L2 readers associate all the sources provided with text and images in order to have a clear idea of the message given. In relation to the compensatory process, van Dijk and Kintsch (1983) claim that readers without relevant prior knowledge need to read a fully coherent, very explicit text in order to construct an efficient representation of the text base, which may in turn be necessary for the subsequent construction of a situation model.

In relation to reading as part of a component process, a study which deserves consideration is that by Gagné et al (1993), who propose that reading involves the following component processes: decoding, literal comprehension, inferential comprehension, and comprehension monitoring. Decoding is a lower-level process in which the reader recognizes the sight vocabulary and activates its meaning in the long-term memory. The next level, literal comprehension, comprises two other sub-processes: a) lexical access, responsible for identifying and selecting the appropriate meaning of the words; and b) parsing, which

uses the syntactic and linguistic rules of the language to derive meaning from larger units of meaning, such as the meaning of a phrase, a clause or a sentence. According to Tumolo (2005), decoding refers to the crack of the code to make it meaningful and it stimulates another process, the literal comprehension process. Because decoding and literal comprehension refer to basic linguistic knowledge, based on information literally expressed in the written text, these processes are considered lower-level.

Regarding the higher-order processes, inferential comprehension involves deeper understanding of ideas, which includes the following sub-processes: integration, summarization and elaboration. Integration is the result of a coherent representation of the ideas in the text, i.e., how the reader connects the ideas expressed in clauses and sentences. Summarization is the mental process that captures the main ideas of the text. Elaboration takes place when the reader brings his/her previous knowledge to integrate the new information presented in the text. These processes, at the inferential comprehension level, imply drawing inferences, and rely on implicit information in the text, based on background knowledge and are therefore considered higher-level processes.

Also considered a higher-level process, comprehension monitoring is related to the reader who monitors his/her comprehension while reading in order to check whether the final objective is achieved.

It seems that the ideas proposed by Gagné (1993) concerning inference making and the processes of decoding and literal comprehension may be significantly helpful to guide the discussion in relation to “how the processes of comprehension take place” during the reading. In addition to the studies conducted by Gagné et al (1993), other studies of particular relevance should provide further understanding of similar complexities, which are discussed next.

Among theories that have discussed reading and mental representation processes, one of the most influential has been proposed by Kintsch and van Dijk (1978). According to the authors, two levels of representation may be found during the reading of a text: The textbase model and the situation model.

The textbase model is defined as “those elements and relations that are directly derived from the text itself” (Kintsch, 1998, p.103). However, according to Kintsch and van Dijk (1978) textbases are not merely unrelated lists of propositions, they are coherent, structured units, which encode the semantic content and structure of the text, i.e. the semantic representation of the text as it is. This process is

characterized as the microstructure level or local level of comprehension. Therefore, it is possible to view immediate recall as representing the textbase level.

The situation model, on the other hand, predicts that two processes occur simultaneously (van Dijk & Kintsch, 1983), which can be described at a more global or macrostructure level. This means to say that in order to comprehend a text, readers need to integrate information from different sentences and relevant information activated from long-term memory into a coherent mental representation, a process which can be captured by a delayed recall task. Because this model is based on the integration from both the content information in the text and information already stored in the reader's memory, background knowledge plays an important role in the construction of the situation model. Taking this into account, it can be argued that delayed recall brings information from the situation model level. The situation model, therefore, represents the construction of a coherent mental representation of the text with the establishment of the necessary links and integration with prior knowledge, all based on the knowledge of the language, of the world, of the communicative situation, and on personal experience, it is "a construction that integrates the text-base and relevant aspects of the comprehender's knowledge" (Kintsch, 1998, p. 107, as cited in Tumolo, 2005).

The following section discusses some important aspects of background knowledge according to schema theory.

2.2 Schema theory and pre-reading activities

Moving on to studies on background knowledge and its importance to reading comprehension, according to the concept of schema theory, reading comprehension is an interactive process between the text and the reader's prior background knowledge (Adams & Collins 1979; Rumelhart, 1980). Schema theory proposes that the reader needs to activate the suitable schemata while reading, which involves previous world knowledge, in order to construct meaning from text. In other words, the meaning that the reader constructs from a text is the result of the integration of his/her previous knowledge with the content of the text. Therefore, this theory predicts that the reader's previous knowledge is fundamental to the process of meaning construction, that is, for the occurrence of comprehension. According to this theory, texts do not carry meaning by themselves, on the contrary, they give the reader directions so that the reader may be able to construct meaning by

connecting the new information provided in the text to his/her previous knowledge.

Based on schema theory, some authors propose and discuss the use of pre-reading activities as an important tool on the activation of previous knowledge, which is crucial for achieving comprehension.

Carrell, (1984) proposes a pedagogical question concerning schema theory and the role played by pre-reading activities for ESL readers. The author brings the question of whether teachers can improve students' reading by helping them to build background knowledge by presenting pre-reading activities to them. According to her point of view, the answer is positive. Besides the use of pictures, Carrell (1984) suggests that appropriate background knowledge can be activated through pre-reading activities including aids such as movies, slides, pictures, field trips, real-life experience, among others. According to this author, ESL lower level proficient readers tend to have a limited vocabulary. Thus, they may be guided to an efficient, successful reading which may be achieved through the use of those activities.

Ringler and Weber (1984) call pre-reading activities enabling activities, because they provide a reader with the necessary background information to organize the reading activity and to comprehend the material. These experiences involve understanding the purpose(s) for reading and building a knowledge base necessary for dealing with the content and the structure of the material. According to these authors, pre-reading activities elicit or build background knowledge, and focus attention.

According to Chia (2001), the aim of previewing, which is a type of pre-reading activity, is to help readers predict or make some educated guesses about what is in the text and, thus, activate effective top-down processing for reading comprehension. Several stimuli in a text, such as the title, photographs, illustrations, or subtitles, are usually closely connected to the author's ideas and content. Therefore, based on any of them, students can make predictions about the content of the text. To make more specific predictions, however, students seem to need more guidance. Among some guidelines offered by this author, one is particularly important. He argues that after eliciting students' ideas on the text, if the text includes illustrations, one should reorganize ideas and include a question related to their use.

Drawing on Tomitch (1991), who conducted a study based on schema activation and pre-reading activities, it is possible to have a view on the effects of the activation of prior knowledge. Concerning the positive findings from the pre-reading activities applied, this author

points out several researchers (Anderson & Pearson, 1984; Carrell & Eisterhold 1998; Gagné et al., 1984, among others) whose studies corroborate the importance of schema theory in the field of reading. According to this author, in a study carried out by Taglieber (1985), three different pre-reading activities were used (previewing, pictorial, and vocabulary) with EFL students of intermediate level. It was found that all the three pre-reading activities improved the subjects' comprehension. However, the first two affected positively the subjects much more than the vocabulary pre-teaching. As regards the studies reviewed in Tomitch (1991), the author considers that: "the majority of the studies show that readers approach texts better when they are presented with some kind of pre-reading activity before actually reading the text" (p. 24).

Taking into account the definitions on schema theory above discussed and the approach related to L2 reading comprehension, it is possible to illustrate how pre-reading activities may elicit reader's background knowledge, which reinforce the relevance of schema theory in relation to the facilitative effect of visual resources for EFL readers. Because schema theory attempts to explain processes which may occur during reading comprehension, this researcher believes that it could provide evidence on whether/ to what extent pre-reading activities assist EFL readers when they are presented with pictures. Such belief is based on the fact that, according to the theory, the text may provide certain clues such as illustrations, which activates the reader's schemata and, thus, lead to text comprehension.

The studies presented previously show that pre-reading activities may be an efficient way to activate and/or construct relevant schemata during reading and thus help readers to comprehend and recall more of a text. The next section discusses studies that have investigated the role of illustrations for reading comprehension.

2.3 The role of illustrations for EFL reading comprehension

As briefly presented in the introduction of this thesis, reading is regarded as one of the four main skills required in the L2 learning process. Studies in both L1 and L2 investigating the effectiveness of pictures to help readers improve their comprehension have been carried out (e.g., Paivio, 1986; Schallert, 1980; Glenberg & Langston, 1992; Hegarty & Just, 1993; Gyselinck, 1994, among others). Despite the fact that the present study focuses on EFL/L2, relevant research in the field of reading have mostly come from L1; therefore, all studies here

presented, either in L1 or L2, will be discussed with similar purpose. Hence, taking into account that the study focuses on the use/ effect of illustrations in L2 text, it seems that a brief review on the functions of pictures in text is needed as a starting point.

Regarding the importance of using illustrations in texts for adults or children, L1 or L2 studies, the majority of the authors in this field agree that illustrations can be helpful. In this sense, Levin et al. (1987) presented a study concerning the functions of pictures in texts, which are listed as follows: decorational, representational, organizational, interpretational (conventional types) and, transformational (unconventional type). Below, a brief explanation on these types is provided.

Decorational pictures simply decorate the page, bringing little relationship to the text. Representational pictures, on the other hand, mirror the text, depicting or overlapping the text content, partially or completely, therefore, assisting students with text recall. Organizational types provide the reader with structural framework presenting illustrations with steps of processes, structures, systems, which may assist the reader to better comprehend the text. As regards interpretational pictures, they help to understand difficult text involving scientific or technical content. In this sense, Mayer (1989) proposed that there are four conditions in which pictorial illustrations can be helpful:

- The text must describe a cause-and-effect system;
- The illustrations must reasonably depict the system or process under consideration;
- Appropriate outcome measures must be selected;
- The learners must be inexperienced with respect to the targeted content domain.

The last type of illustrations to be briefly reviewed, transformational pictures, include components that are designed to improve the readers' recall of the text. Keyword illustrations are used along with text content so that the students could perform in a higher order condition, such as making inferences.

As for this researcher's point of view, the organizational type is considered more relevant for this study since it is related to instructions to be followed by the reader. These pictures provide a useful structural framework for text content (e.g., an illustrated map of a hiking trail or illustrations which accompany the text in order to describe the series of

steps performing cardiopulmonary resuscitation (Carney & Levin, 2002).

As regards studies that have provided pieces of evidence both, for and against the effectiveness of illustrations in texts, Schallert (1980) analyzes research with both views with the purpose of determining when and why pictures can be effective for comprehension. The author reviews some important findings and points out that they have come up with contradictory conclusions. Some of these conclusions refer to the facilitative effect of pictures whereas some refer to the fact that pictures make no difference for reading comprehension.

Concerning the negative effect of illustrations in children's texts, Schallert (1980) points out the study by Samuels (1967), who carried out an experiment based on learning to read processes with children. In his study, tests consisted of trials in which children were asked to read aloud words in the context of illustrations, isolated sentences, both, or words without any context. Results indicated that pictures interfere with children's acquisition of a sight vocabulary, as the author proposed as follows:

When there is more than one cue to a particular response, as for example, when a picture appears with a printed label, readers will focus their attention on the cue that helps them produce the response with the least effort. (Samuels, 1967, as cited in Schallert, 1980, p.505).

On the other hand, according to Schallert (1980), since 1970, other findings in the area of reading research have shown significant positive effects of illustrations. Denburg (1976-1977), for instance, has reported one direct challenge to Samuels's results. According to results in her study, there were indications that children were able to read more words correctly if they were also represented by pictures. In addition, according to her, in the study presented by Samuels (1967) it was not possible to convey new information added by the use of illustrations and that would restrict the information content of the reading. That is to say, only by bringing an illustration vaguely related to the total message may not be helpful, especially when beginning readers are the focus. On the ground of "when an illustration may be effective for comprehension", Schallert considers the information content of pictures and its relationship to the text as being decisive. Schallert et al (1980) carried out a study in which participants were assigned to a non- picture and a

picture condition text, where a schematic representation related how parts of a faucet would be connected. Findings indicated that as for the picture condition group, as measured by a multiple-choice and a free recall test, children learned more information than those in the no-picture group. In the present study, following Schallert (1980), both a multiple-choice and a recall test are used.

The positive view has proved to be relevant and for that, research on the effectiveness of images in text comprehension has been the subject of discussion and analyses in the educational field. Glenberg and Langston (1992) conducted a study with two experimental conditions, using texts with and without pictures. Results showed that pictures help readers to generate important inferences during the reading process, which, thus, are essential for comprehension. According to their study, pictures help to build mental models, a process by which readers can make inferences through the representation in working memory caused by the combination of two or more sources of information during the reading process. Moreover, the authors argue that their results corroborate many other studies, which have demonstrated that pictures have, thus, facilitative effects for comprehension through the integration of information from pictures and the verbal content in texts.

Hegarty and Just (1993) have also given an important contribution to the area of illustrations and reading, by carrying out a study on text comprehension with diagrams. According to them, “when people read text, they construct representations on several levels, including (a) a representation of the text itself, essentially the propositional content of the text and (b) a representation of the situation or the object described in the text” (p. 717-718). Moreover, these authors have argued that constructing a mental model may be facilitated when the text is accompanied by an illustration. One of their experiments showed that participants could clearly benefit from both the text and the diagram about mechanical systems. Such kind of systems are more likely to be (more) dependent on illustration since the readers’ behavior suggest that they integrate information by reading and rereading the content presented in the text with the aid of the diagram. To unfold this impact the participants would be asked to answer comprehension questions and draw the systems after reading the text.

The text used in their experiment is presented below.

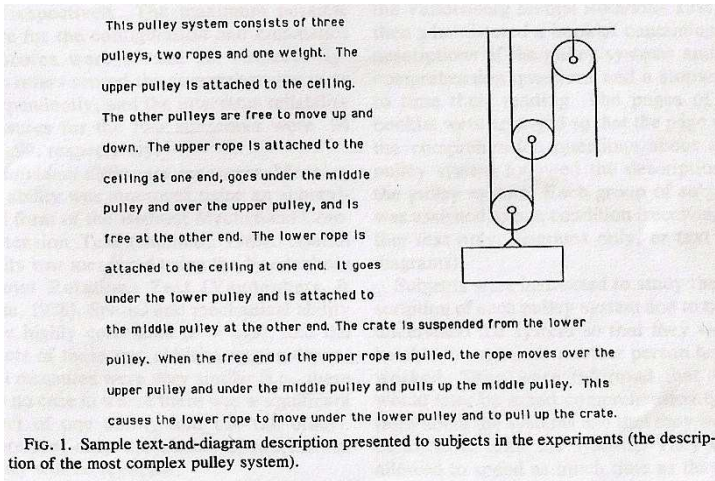


Figure 1. Description of the pulley system used in the experiments. Hegarty & Just (1993)

According to the authors, the conjunction of text and diagram proved to benefit comprehension since the reader integrate the information from two media. However, the researchers point at some difficulties to find more clear answers according to studies which have been carried out in this field and which deserve attention. One of these difficulties is related to how illustrations may actually help for comprehension. In addition to that, it is meaningful to add two questions provided by Hegarty and Just (1993) concerning their experiment: “would the comprehension of a given device have suffered if the diagram had been omitted?” or “could the readers have figured out how the device works from a diagram alone, without the benefit of the text?” (p.718).

An issue to highlight concerning the study aforementioned is that it focused on a pulley system instruction, that is to say, those types of texts with instructions which the reader may need to focus on procedures being guided by the illustrations presented. In that case, for comprehension to occur, the reader should be able to gather three vital items during the reading of the text: the text itself, the diagram, and his/her prior knowledge, including knowledge of the subject matter. The authors claim that parallel resources should always play the role of being a support by bringing new information. These resources should

not be used to repeat information already given in the text. In other words, the use of illustrations plays more important roles than being a mere decoration item. They may help EFL readers, being essential during the reading of a L2 text.

Gyselinck and Tardieu (1992) have also contributed to this field by addressing the following question: “when is a picture worth a thousand words?” They propose that the beneficial effect of illustrations take place during the construction of a mental model by arguing that: “illustrations promote text understanding because they facilitate the construction of a mental model that is the source of inferences” (p.198). In one of the experiments carried out by Gyselinck (1995), the author attempted to study the effect of pictures on the course of comprehension for participants who had basic notions of physics and chemistry (L1). Participants read texts either with, or without pictures. After that, they were submitted to two three-choice questions that interrupted reading. Part of these results showed that the participants who had a With-picture condition text had higher scoring than the ones who read a text without pictures. However, the No-picture condition had better results on inference questions.

An example of part of the illustration used for this experiment is presented:

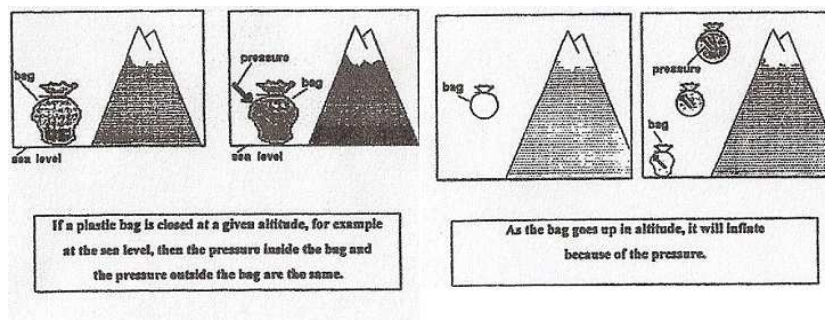


Figure 2. Part of the illustration describing notions of physics. Gyselinck (1995)

One of the claims brought in the study mentioned concerns “who can benefit from illustrations”. Does this benefit depend on one’s knowledge or do some readers have specific abilities which make them good picture readers? In this sense, it is important to point out that one issue to be investigated in this research is based on the assumption that L2 readers with low ability to understand specific texts may use the

support of an illustration in order to better achieve comprehension. As Gysenlinck and Tardieu have emphasized, most of the studies on the effect of illustrations have examined participants who have low prior knowledge in the domain of the text in L1. Among the researchers used by these authors in order to enrich the investigation on the effectiveness of illustrations, they point out Mayer and Gallini who conducted a series of three experiments using pictures. According to Mayer and Gallini (1990; as cited in Gysenlinck & Tardieu, 1992), pictures may help participants who cannot achieve comprehension due to their lack of knowledge in a certain area. In their experiments, participants read texts concerning how scientific devices work e.g. braking systems or pumps. For that, they contrasted various types of input such as: no illustration text (control), static illustrations of the device with steps to guide (parts), dynamic illustrations showing the off and on states of the device (parts and steps). Their findings indicated that the beneficial effect of parts-and-steps illustrations improved the participants' recall on conceptual information and helped the readers build internal connections to draw elaborative inferences². Moreover, it was also observed that these beneficial effects of parts-and-steps illustrations were mainly for the low prior knowledge participants.

² Elaborative inferences may be produced to "cover up an inability to recall details of the original text, and may have detrimental effects on text information (van Dijk and Kintsch 1983; as cited in Tomitch, p.92, 2003).

The example depicted in figure 3 illustrates the types of illustrations used in their experiment:

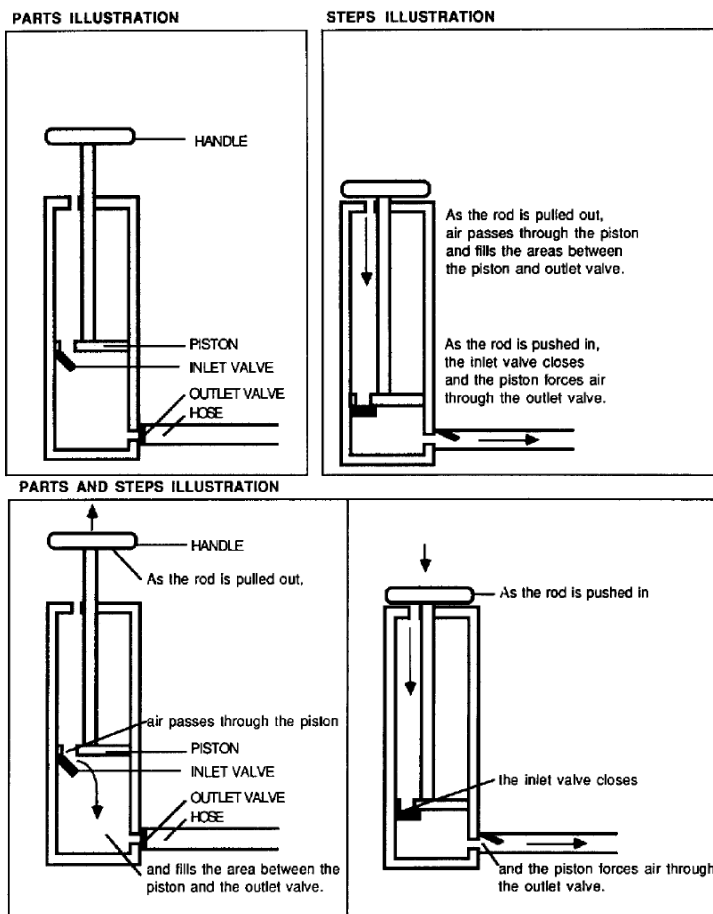


Figure 3 . Illustration of a pump system. (Adapted from *The World Book Encyclopedia*, Vol. 15, p. 794, 1987, Chicago: World Book, Inc. Copyright 1990 by World Book, Inc. by permission of the publisher.)

The studies aforementioned have attempted to explain the inferences that readers make during the integration of both text and picture, allowing them to build connections. In addition, this process would be more effective when the reader has the chance to have both

text and picture so that it is possible to navigate from one source to another, making more accurate inferences. Thus, the same could apply for second language readers whose level of proficiency is not high enough to follow a L2 text without the use of tools to assist them improve comprehension of the content, pictures, in this case.

Moving back to the field of L2 studies, there is little research in the field of second language as compared to first language on the extent to which pictures may be effective for reading comprehension, especially when L2 readers have basic proficiency level. Despite all the studies reviewed both in L1 and L2 in this chapter, research on EFL/L2 reading comprehension is still needed. As to more recent research, Buratini (2004) gives an important contribution to this field, which regards L2 and visual aids. Although her study was carried out entirely in Portuguese, it focuses on the importance of visual information for EFL/L2 text comprehension.

The study conducted by Buratini (2004), which was based on semiotics theories claimed by Kress and van Leeuwen (1996), discusses the contribution of both visual and verbal (written) information for the process of reading and understanding a text in L2 as well as it discusses the importance in which visual aids should be employed in order to “fill possible gaps” due to lack of linguistic knowledge. Following the theory, the author restates that visual resources are fundamental for the integration of visual information and written forms so that comprehension is achieved, as the excerpt explains:

“The literature also indicates that visual resources, such as title and illustration, as well as extra-verbal graphic resources (bold type, italics, diagrams, paragraphing) may contribute to the formation of the hypotheses which anchor descendent processes and which contribute to text comprehension” (p.3, my translation)³

The author focused her investigation upon the relation of visual information to assist comprehension in EFL texts. For that, she analyzed

³ Original Text: A literatura também indica que os recursos visuais, tais como título e ilustração, bem como os recursos gráficos extra-verbais (negrito, itálico, diagramação, paragrafação) podem contribuir para a formação de hipóteses que ancoram processos descendentes e contribuem para a compreensão do texto (Buratini,2004).

university admission examination (vestibular) at UNICAMP (Universidade Estadual de Campinas), crossing data with the candidates' performance. According to her findings, the empirical analysis showed that the visual aspect may assist comprehension when it is thematic and completes the verbal information; however, if the illustration presented has an ironic perspective, it will not be helpful since readers may not be prepared for understanding EFL/L2 text with such perspective. Based on the compensatory process claimed by Stanovich (1980), which is concerned with readers' proficiency limitations, the author suggests that the integration of visual and verbal aspects in texts is necessary for comprehension of textual sense, since it may be useful to provide support for different compensatory processes (Stanovich, 1980, as cited in Buratini, 2004). Therefore, it is possible to assume that the compensatory model may explain the adaptations which were necessary to accomplish the tasks used in the present study. Because the level of the text used had to be revised, then the use of illustrations becomes strategic (accessory). Taking that into account, the basic level reader has to be aware of strategies to fill in gaps of comprehension.

Moving on to the next topic, it presents an account of the DCT - Dual Coding Theory by means of reporting the relevance of imagery for reading comprehension.

2.3.1 The dual coding theory

The Dual Coding Theory (DCT) was proposed by Paivio (1971, 1986; as cited in Paivio, 2006). The theory was first developed in order to explain verbal and non-verbal influences on memory. However, the theory has also extended to other fields since it has been considered of extreme/vital importance, being applied, in particular, in the educational field. DCT takes into account verbal and non-verbal influences on memory for reading comprehension, which are described as language and imagery. According to this theory, the verbal system focuses on mental processes, which is called propositions or schemata whereas the non-verbal system focuses on the beneficial effects of imagery on memory. This discussion allows for a further thought at this point, since imagery can be defined as a process by which readers' behavior is analyzed after they have pictured an image in their minds while/or after reading a text. The theory claims that information is stored in long-term memory both as verbal propositions and as mental images. It suggests that when information is presented both verbally and visually, it has a

better chance of being remembered thus, providing a better recall. In order to provide empirical evidence on how pictures may have played important roles on memory, in a more recent article, Paivio (2006) discusses some experiments conducted by scholars in the area. Sadoski (1985)'s results, for instance, showed that children who were questioned prior to story recall and reported a climax image recalled more of the story than those who did not report a climax image. Besides, there was no such effect for children who recalled their imagery after recalling the story.

As for the educational field, when discussing the reading skills, Paivio's DCT stresses that, beginning readers learn to read concrete words by sight much faster when the words are accompanied by referent pictures (Paivio, 2006, p. 11). In this sense, this theory may guide the present discussion as regards its positive results in relation to the use of pictures and the process of reading in L2 for basic level readers.

Some researchers have followed the theory in other fields such as the cognitive sciences and computational cognitive modeling (e.g., Anderson, 2005; Just et al., 2004), which have showed that the DCT has also contributed to enrich the field of reading comprehension. Acknowledging the contribution given by DCT, it is feasible to integrate its relevance to this study since it has brought strong considerations about the use of images and its effect on memory.

As can be seen, based on the studies and theories here presented, there seems to have an agreement among researchers from several fields in relation to the fact that there are different sources of information the reader draws upon in order to construct the meaning of a text and one useful source may be the accompanying illustrations. In addition, the studies are relevant for any research which involves the facilitative effect of illustrations in reading comprehension, since it has given new views on how to work with images so that they may become increasingly useful for EFL readers.

In the field of reading comprehension, more studies are needed so as to investigate the benefits of pictures for EFL text comprehension. Therefore, this study attempts to fill part of this gap and assess the effectiveness of illustrations in facilitating text comprehension for basic level EFL readers.

CHAPTER III

METHOD

Having presented the review of literature relevant for this study in the previous chapter, the present one reports the method used for data collection and for data analysis. The first section (3.1) presents information about the participants chosen for this study; the second section (3.2) describes the instruments used; in the following section (3.3) the design is presented; in section (3.4) the procedures are described; and the last section (3.5) briefly presents the pilot studies.

3.1. Participants

The participants in this study were originally 18. However, in the conclusive phase they were 13 (thirteen) adult Brazilian native speakers of Portuguese, students of English, taking regular classes at the Extracurricular course - DLLE, UFSC (Universidade Federal de Santa Catarina). The group was formed by seven male and six female, ranging from 18 (eighteen) to 45 (forty-five) years old. They were attending the third semester which corresponds to level three, from a total of 10 levels. This level implies that students have had approximately 135 (one hundred and thirty five) hours of English language classes, being therefore, at the basic level. According to Mayer and Gallini's claims (1990), pictures may help readers who cannot achieve comprehension due to their lack of knowledge in a certain area, (as cited in Gyselinck & Tardieu, 1992). Therefore, the reason for choosing participants of a basic level of proficiency relies on the interest in finding whether L2 students with a basic level of proficiency tend to benefit from illustrations present in the text, showing better comprehension.

3.2. Instruments

For the present study, the instruments for researching the influence of images in text comprehension included two adapted versions of an instructional text, a free immediate recall test, a multiple choice test, a written retrospective questionnaire, and a free delayed recall test, which will be carefully described in the subsections that follow:

3.2.1 Instructional text

The text selected was taken from an American publication called “*Genuine Articles – Authentic texts for intermediate students of American English*” (Walter, 1994), which was part of a magazine article (see Appendix A). The decision about the use of an authentic text was based on the premise that the experiments carried out for academic purposes should present a more realistic approach. However, due to the students’ level of proficiency, the text had to be adapted to fit the purposes of the present study. The text type chosen presented instructions to the reader. One reason for choosing an instructional text for data collection is that many studies found in the field of reading comprehension have claimed that instructional texts are thought to promote learning since they include a variety of illustrations (Brody, 1981; Gysenlinck & Tardieu, 1999; Paivio, 1971; 1986). Moreover, the main goal of an instructional text is to instruct, teach and show the reader how something must be done through a set of procedures. Some of these procedures are usually followed by pictures in order to give the reader clues. These clues may help the process of comprehension in both L1 and L2. In this sense, the information in the written text may be better understood, which leads to the compensatory model by Stanovich (1980), which assumes that basic level readers may use strategies in order to achieve comprehension. This could be considered, thus, an aid to basic level EFL readers.

Two versions of the text, one with and the other one without images (see Appendix B), were constructed. The text, “How to protect yourself – at home” originally presented twelve tips on how to protect a house from robberies. The with-picture version was applied to both a Pre-reading group and a With-picture group. The second version, without images was applied to the No-picture group. Some words and/or expressions such as **glass-paned**, **dead-bolt lock**, **hinges**, were removed from the original text due to their higher level vocabulary and the number of words assumed to be unknown by the participants, which could bring the possibility of having a too long glossary, considering the whole text, thus, affecting actual results. Another change made was concerning the size of the text. In the versions presented, the texts were shortened to seven tips and the vocabulary was revised to fit the level of the participants. Some paragraphs were revised considering that with the information removed it could become a simpler text to read and, thus, more appropriate for them to fit the level of the participants. Another change made was in relation to the layout of the text. It originally

presented twelve tips, as already mentioned. However, only 7 tips presented its respective illustration. These pictures were presented at the end of the text, not beside each text as it was made in the versions adapted. Moreover, some of the tips removed had more elaborated sentences using more structured grammar. Finally, it was necessary to design some extra illustrations for the texts chosen but which did not present illustrations. Therefore, it was a challenge try to “fill the gap” not repeating the message written beside it.

3.2.2 Informed Consent Form - Written Instructions

As requested by the Ethics Committee (*CEP – Comitê de Ética em Pesquisa*), an Informed Consent Form (see Appendix C) was given to the participants in order to inform them about the study, the context of the research, the researcher and the Professors involved in this investigation. The consent form was written in L1 (Portuguese), the participants’ mother language. The form was signed by the participants prior to their participation in the study.

3.2.3 Free Immediate Recall

Soon after the participants finished reading the text, they were given a sheet with instructions in English (L2), in which they were asked to write everything they could recall from the text in complete sentences (see Appendix D). The participants were allowed to recall either in L1 (Portuguese) or L2 (English) since language use was not the main focus of the study. The free recall test was applied in order to assess immediate text recall and correlate results with the delayed recall, taking into account the groups with and without pictures. For the purpose of evaluating the recall protocols, three raters, proficient EFL readers, students of the Masters’ program 2008 (Programa de Pós-Graduação em Letras Inglês e Literatura Correspondente), were chosen so that the results obtained could be validated. The researcher was also considered to be a rater since the profile presented by the other three raters was similar. The scoring was based on 7(seven) main and 7(seven) secondary propositions found in the text. The maximum scoring for the correct propositions will be further explained in section 3.3.

3.2.4 Multiple - choice test

The second test was a multiple choice test. It consisted of 8 (eight) questions, with four options each (see Appendix E), presenting sentences with the literal comprehension taken from the text, since literal comprehension is considered a lower level process. It was applied as soon as each participant finished the free recall test. As with the preceding test, it was presented in English (L2). The participants were supposed to choose one of the four options given. The purpose of the test was to check the participants' comprehension of the text through a recognition test (e.g. multiple-choice), as a result of reading with or without an illustration. The decision for a recognition test (with multiple-choice questions) is that this kind of test may be used as assessment of both lower and higher level processes and various skills, in this case a basic level EFL group.

3.2.5 Retrospective Questionnaire

A retrospective questionnaire (see Appendix F), adapted from Tomitch (2003), was applied in L1 (Portuguese). It aimed at looking for further answers through which participants could give their opinions on the easiness or difficulty they encountered when reading the text. For that, eight questions were used involving aspects concerning text content as well as the participant's subjective evaluation on their reading of the text.

3.2.6 Free delayed recall

A free delayed recall (see Appendix G) was applied to the same group one week after the first encounter. This last session aimed at measuring the number of propositions recalled as compared to the immediate recall. As for this second phase and similar to the first one, the participants were allowed to choose recalling in L1 or L2. Thus, the basic instructions given during the free immediate and delayed recall were the same. Grammar or spelling mistakes were not taken into account, since this was not the focus in this study. An important issue observed as soon as the participants accomplished their task was that, with one exception, the participants from all groups chose to recall in L1 (Portuguese). In the immediate recall they had chosen to recall in L2 (English), however, for the delayed recall, they noticed this task would

be more time consuming and, therefore, they made the decision to accomplish the recall in L1.

3.3. Design of the study

The present study consists of five activities/tasks: reading a text; a free immediate recall; a multiple-choice task; a delayed recall; and a retrospective questionnaire, already described in subsections 3.2.3,4,5, and 6. The decision for choosing basic level participants was firstly based on both the pre-pilot and the pilot study, findings of which did not signal any significant effect of illustrations on a population of more proficient learners, as the text and tests were presented to them. In fact, it was after having such results that the main assumption of the study was considered, that is, pictures might have a greater facilitative role in comprehension for EFL basic level readers. For doing so, the academic environment, more specifically the extracurricular course at UFSC was chosen. Therefore, a group of EFL students who were in the third semester, that is, basic level, was chosen for this study.

In order to measure probable differences in text comprehension, the participants were divided in three different groups for assessment. The participants and procedures were divided as follows: Group 1, the treatment group 1 (PRG: Pre-Reading Group), which received a pre-reading activity in the projector, exploring the images present in the text by eliciting the participants about the content of the text, read the instructional text with images and took all tests; Group 2, the treatment group 2 (WPG: With-Picture Group), which read the written texts with images and took all tests; Group 3, the control group (NPG: No-Picture Group), which read the written texts without images and took all tests.

Initially, the decision for choosing the groups above described was based on the assumption that illustrations facilitate comprehension for EFL basic level proficient students. Accordingly, two groups, With and Without-pictures groups, were chosen. After considering that a pre-reading activity could help the students even more than only presenting pictures, a third group, a Pre-reading group was chosen. Considering that the three groups were from the same level, and taking into account that their level of familiarity with the text could be similar, they all read the same text and performed the same tasks, but with different treatment, as explained above. The with-picture group was chosen to measure the effectiveness of illustrations with the instructional text; the no-picture group was chosen as reference group as it was a no-treatment

group (control). This group was measured in order to have a better view when analyzing the groups which worked with the illustrated text; the pre-reading group was chosen to measure whether or to what extent pictures, when applied as pre-reading activity, can facilitate text comprehension than only using the pictures with the text. With this design it would be possible to investigate the effects of pictures on reading comprehension according to results from the pre-reading activity, the recall task, and the multiple-choice task applied.

3.4. Procedures

As there were 2 phases for data collection, the immediate recall and the delayed recall tests, the data collected from 5 (five) participants in the first phase were disregarded due to their absence in the second phase. Therefore, participants in this study were 13 (thirteen) students. The whole experiment was divided into two phases with a group of 18 participants in phase 1 and 13 participants in phase 2. Data were gathered on regular class days with participants of the Extracurricular course (UFSC), EFL learners from the third level. Before any instrument was applied the participants were briefly informed about the purpose of the study, when they signed the aforementioned consent form. The experiment was carried out in June, 2009. Each phase is described in detail in the next subsection.

3.4.1. Phase 1 –Immediate recall task

Regarding phase 1 of data collection, one of the instruments applied focused on the immediate recall, that is, what participants could remember soon after they finished reading the text. In this phase, from the thirteen participants, three smaller groups were formed and taken to another room, one group at a time, where they could answer the tests. The participants were instructed to carefully read the instructions (see Appendix H). The instructions informed the participants that they would not be able to go back to the text while answering the tests, since it could affect the results negatively. All groups read the same instructional text.

For the PRG, the pre-reading activity was recorded (see Appendix I) along with the participants' responses in order to allow for later data analysis, aiming at how participants responded to the procedure. Both the instructions and the pre-reading activity were in L1 (Portuguese). During the first 8 (eight) minutes, participants were

stimulated to answer questions such as “*Que título você daria a um texto baseando-se nessas imagens?*”, based on the images shown on the screen. Time was set after the pre-reading activity had finished. Soon after the pre-reading activity was carried out, the PRG was given the text with images and informed they were going to be timed from that time on, until the last participant had completed his/her very last test. As mentioned before, after having read the texts each group was instructed to answer a free recall activity first, followed by a multiple choice task and soon after that, a retrospective form. All tests were answered in an individual manner. To do so, participants were instructed to raise hands whenever they had finished one activity so that the next one could be applied.

As for the WPG (group 2) and the NPG (group 3), they were not exposed to a pre-reading activity and both groups were given 25 minutes each, to accomplish the whole activity. Such procedure was based on the time that group 1 (PRG) accomplished the pre-reading activity and the reading of the text. Both written and oral instructions were given in Portuguese as the purpose of the study was related to participants’ proficiency level in L2 in a way that the instructions would not interfere with the results. As the instruments were adapted for the level of the participants (level 3), the multiple-choice test was presented in L2. Both immediate and delayed recall tests had their instructions in L2 but participants could choose either L2 or L1 to answer them. However, in order to avoid problems when giving personal opinions in L2, the retrospective questionnaire was written in L1 and the participants were instructed to write their answers either in Portuguese (L1) or in English (L2), choosing the way they were more comfortable with.

3.4.2 Propositional Scoring

In relation to the procedure for scoring the free recall, the sentences were propositionalized. The method was based on a scheme developed and used by Tomitch (1990). Van Dijk and Kintsch (1983) define a proposition as “an intentional unit corresponding to the meaning of a sentence in linguistic theory and to the conceptual representation of a sentence in a cognitive model of language comprehension” (p.112) (as cited in Tomitch, 2003). In order to have more reliable results, three raters were chosen to evaluate the propositions so that the scoring could be validated. This researcher was also considered to be a rater. The analysis consisted of counting the number of main and secondary propositions (see Appendix J) in the

original text. As the text presented seven paragraphs, each presenting a different tip on how to protect the house, seven main propositions and seven secondary ones were identified. Each secondary proposition was related to one main proposition. The main propositions were evaluated with a maximum value of 80% while the secondary propositions had the maximum value of 20%. As for the general results and analysis in relation to both immediate and delayed recall, the final scoring (100%) was found by adding the scores from the main and secondary propositions. In order to illustrate this explanation, table 1 below shows one excerpt taken from the text, how it was propositionalized in the rater's classification providing, thus, two lists for both main and secondary propositions as shown in Tables 2 and 3.

Table 1 – Table: Example of main and secondary propositions: Raters' evaluation

Give the impression that someone is home when you go out.
 (main proposition) **Activate interior lights** (secondary proposition)
 with timers set to go on and off alternately in different rooms. **The sound of a television or radio on in a house or apartment also helps**
 (secondary proposition) – these can be timer-activated too.⁴

Table 2 – Main propositions: Score sheet – results based on the raters' evaluation

- 1- Have a home security checkup
 - 2- Illuminate your home and property
 - 3- Let friends know when a repairman is at your house
 - 4- If a visitor starts behaving suspiciously, get out!
 - 5- Give the impression that someone is at home
 - 6- Never give information over the phone to an unknown caller
 - 7- Never say you are not at home on the answering machine.
-

Maximum Value: 80%

⁴ Please refer to appendix J for the complete Table.

Table 3 - Secondary propositions: Score sheet – results based on the raters' evaluation

- 1- Ask a local police officer to check your home;
 - 2- Put light in front of your house entrance; Cut bushes near the entrance
 - 3- Invite a neighbor for coffee while a repairman is around.
 - 4- Scream Fire! or Police! To attract your neighbors' attention.
 - 5- Activate interior lights. // Leave the TV or radio on.
 - 6- When receiving a strange call, ask a number to call back. // Instruct your children how to behave with strangers on the phone.
 - 7- Leave a recorded message (saying that you are unable at the moment).
-

Maximum value: 20%

3.4.3 Phase 2: Delayed recall

Concerning phase 2 of data collection, a second session took place a week after the first one. In this second phase, there was a free delayed recall test (see Appendix M) in which the participants were instructed to write everything they could remember from the text they had read one week before. Although the test instructions were written in L2 (English) the participants were allowed to choose between their mother tongue and L2 to do the recall. There was no need to divide the group for this procedure since there was only one test for this phase and the instructions were the same to all participants.

3.5 Pilot Study

The pilot study comprises one pre-pilot and a pilot study.

3.5.1 Pre-pilot

A pre-pilot experiment was carried out with four students of English in Curitiba. Two participants were undergraduate students and considered basic level whereas the other two who were graduated and considered upper intermediate regarding their level of proficiency in English. These levels were based on the courses they were taking at the moment of the experiment. The participants read a text with instructions on how to save a life, the title of which was “How to carry out

resuscitation” – How to save a life”. The participants had similar tests as the ones applied in the study. However, the retrospective interview was not applied since it was in progress during the pre-pilot. Results revealed that the pictures used in the text were a bit confusing, not clear enough to help the students in the case of L2 studies. In addition, the more advanced participants’ results showed that the use of pictures did not make any difference for them since they understood the whole vocabulary presented, showing that the vocabulary was too easy. Therefore, these results allowed the researcher to change the text and find one which could really make a difference concerning the use of pictures as being helpful for EFL readers. Thus, a new text “How to protect yourself: at home” was chosen.

3.5.2 Pilot Study

Before the actual data collection, one pilot study was conducted in May 2009, two weeks. The pilot study took place within the same environment but with different participants from the extra-curricular course, at DLLE (UFSC). The pilot study contributed to the main study in the following ways: first, in relation to the organization of time for the pre-reading activity with the group; second, procedures for instructing participants for the recall protocol could be improved. Since time was considered a challenge, the pilot study was useful to prioritize what should actually be explained to the participants, that is to say, going straight to the point and not wasting so much time with details; and third, the encounters made it feasible to make changes in the manner the tests were being conducted by analyzing and organizing the most appropriate number of sessions for data collection. Due to the number of participants and the need for using another room, the researcher was supposed to conduct each group from their classroom to another room and the way back, which could be time consuming, and therefore another encounter would have been necessary.

The next chapter brings the results and the discussion of the data obtained.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter presents and discusses the results obtained in this study in relation to the following tasks: free immediate recall, multiple-choice questions, free delayed recall, and the retrospective questionnaire. Section 4.1 presents the results concerning the immediate free recall task; section 4.2 reports the multiple choice test results; in section 4.3 the data referring to the delayed recall task are presented; and in section 4.4, the results from the retrospective questionnaire are reported.

After presenting and discussing the results, each of the research questions proposed in the study is retaken in section 4.5.

4.1 Free Immediate Recall

As mentioned in the previous chapter, the purpose of the free recall test was to measure text comprehension and to correlate it with the delayed recall results. The measure adopted for this study, according to the raters' results, were 7(seven) main and 7(seven) secondary propositions found in the original text. The quantitative analysis consisted of counting the number of propositions recalled by each participant and adding that to his/her group's results. The final average was based on the scores obtained per group.

Table 4 below reports the results obtained for each of the groups (PRG, WPG and NPG).

Table 4 – Free Immediate Recall - Main propositions: (Mean scores obtained per group)

PRE- READING GROUP		WITH-PICTURE GROUP		NO- PICTURE GROUP	
P1	34.28%	P5	45.71%	P9	45.71%
P2	45.71%	P6	22.85%	P10	22.85%
P3	45.71%	P7	11.43%	P11	34.28%
P4	45.71%	P8	11.43%	P12	22.85%
				P13	0%
Average	42.85%		22.85%		25.13%

P1... P13 = participant

Overall, results show that the Pre-Reading Group (PRG) had the best recall, 42.85%, as compared to the other two groups. The NPG' mean scores were 25.13% whereas WPG' mean scores were 22.85%. Regarding the results for the main propositions, the No-Picture Group (NPG), unexpectedly, performed better than the With-Picture Group (WPG). Although the difference would probably not be considered significant, when considering the use of pictures for WPG, better results for this group were expected. This may be explained by the fact that two of the WPG' participants - P7 and P8, respectively, had the lowest scoring of all groups. Below some examples taken from the participants' performance in the immediate recall task.

P4 (PRG): Make sure you are not alone when some (sic) repairman is at your home. Invite a neighbor to drink (sic) coffee with you.

P7 (WPG): The text show different possibilities for safe. If you don't stay home you need to turn on some electronics for (sic) making noise. You will be in safe if you protect your home.

As can be observed, the first instance shows an excerpt from a participant who recalled one main proposition followed by a secondary one in a connected and organized manner. On the other hand, the participant from the WPG presented disconnected sentences, repeating ideas, which did not signal that the participant had identified the main or secondary ideas in his/her text. Besides, there was no evidence that the pictures helped in this case, which would probably point to the positive effect of pictures within the context of presenting them to elicit students' previous knowledge, before the actual reading process.

In relation to the results for the secondary propositions, Table 5 reports the results obtained according to each group (PRG, WPG and NPG). The maximum (max) mean scoring adopted for this test was 20%.

Table 5 – Immediate Recall - Secondary propositions (Mean scores obtained per group)

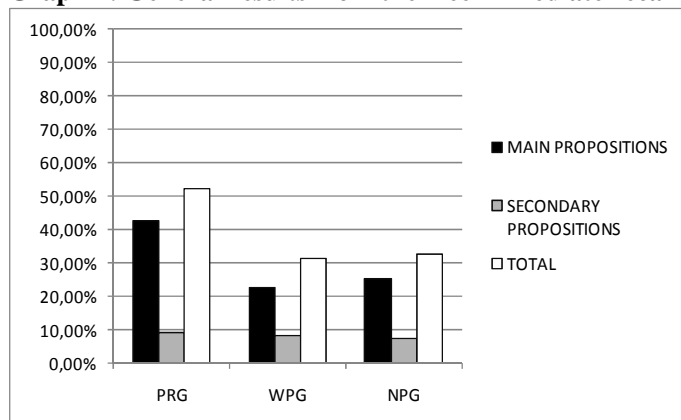
PRE- READING GROUP		WITH-PICTURE GROUP		NO- PICTURE GROUP	
P1	14.28%	P5	5.71%	P9	5.71%
P2	8.57%	P6	8.57%	P10	8.57%
P3	8.57%	P7	2.85%	P11	8.57%
P4	5.71%	P8	17.14%	P12	8.57%
				P13	5.71%
Average	9.28%		8.56%		7.42%

P1... P13 = participant

In regard to the secondary propositions recalled, the PRG achieved 9.28%, followed by the WPG with 8.56% and the NPG with 7.42%. However, the difference found between participants from the PRG and the WPG could not be considered significant. A slight difference may be considered when comparing the number of secondary propositions recalled by the PRG with the NPG.

Graph 1 below presents the general results in terms of free immediate recall for both the main and the secondary propositions:

Graph 1: General results from the free immediate recall



PRG = Pre-Reading Group

WPG = With- Picture Group

NPG = No-Picture Group

When analyzing the final results, that is, the total scoring obtained from the propositions as a whole, as with the main propositions only, the PRG (52.13%) performed at their best when compared to the other two groups. The NPG had a total of 32.55% while WPG achieved 31.41%, meaning that NPG, in this phase, recalled slightly better than WPG. However, the difference between these two groups would certainly be not significant. Therefore, the overall results above described guide to an important finding related to the assumption proposed in this study, that is, the PRG outperformed the other two groups in the immediate recall task.

As stated in the Review of the Literature, some mental processes which take place during or after the reading comprehension have been discussed among several researchers in the field of reading. Although it is not the main purpose of the study to discuss on mental processes in text comprehension, a tentative explanation follows. In terms of mental representation of a text, the theory claimed by Kintsch and van Dijk (1978), described in the review section, distinguishes some types of representations generated during the comprehension of a text, two of which are called textbase and situation model. Textbases can be described according to the microstructure or local level, that is, what was in fact understood during the reading of the text at the micro level. According to this theory, a piece of discourse may be considered coherent if the propositions are connected and organized. Therefore, given the fact that the immediate recall is directly related to the textbase, it is possible to say that as for the implications for textbase construction, the illustrations shown right before the participants read the text benefited only the PRG, according to the number of propositions recalled immediately after the reading, rather than the WPG. In this sense, at the local level, text comprehension seems to have been improved by the use of pictures providing thus better recall for the PRG's participants. On the other hand, there is not enough quantitative evidence to claim that pictures provided better recall in relation to the textbase for the WPG.

One issue that could be pointed here is the fact that, if a text provides appropriate signals to the reader as to what is important and what is not, readers are generally able to form an adequate textbase, even with minimal domain knowledge (Kintsch & Franzke, 1994; as cited in Lorch & O'Brien, 1995, p.330). If taking into account the same argument above in relation to L2 reading, it could explain the results for the PRG. In this researcher's point of view the presentation of a pre-

reading activity along with pictures did make a difference as opposed to what happened to the NPG. In this sense, when considering the NPG, it could be said that the lack of signals, that is, no pictures, may have affected their general results, which were the lowest, results which reinforce the positive effect of illustrations.

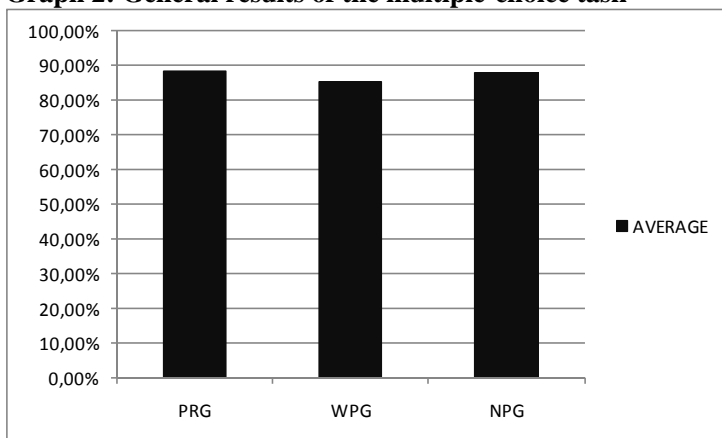
4.2 Multiple - choice Test

In relation to the multiple-choice test, 8 (eight) questions were presented in order to elicit the participants' literal comprehension regarding texts with and without pictures.

According to Tumolo (2005), "the method MCQ (Multiple choice questions) is flexible enough to allow assessment of various skills and different levels of comprehension" (p.117); thus, the test was considered a useful tool to measure comprehension of a L2 text, whose content was based on instructions.

Results showed higher mean scoring as compared to the free immediate recall test. However, there were no significant differences among the groups. PRG had 88.25%, WPG had 85.25%, and NPG's total was 87.8%, meaning that participants performed at a "ceiling" (see Graph 2 below).

Graph 2: General results of the multiple-choice task



PRG = Pre-Reading Group

WPG = With-Picture Group

NPG = No-Picture Group

Looking at the general results, as shown in Graph 2 above, it can be seen that there were no significant differences between PRG, WPG and NPG. However, some issues were observed. First, all groups achieved a high scoring, that is, more than 85%. Second, these results are higher when compared to the free recall in relation to all groups. On the other hand, higher scores for this test were somewhat expected since MCQ tests do not imply a more elaborated performance from EFL readers such as writing a free recall, but on the recognition of complete ideas already stated in the text. Moreover, the MCQ test measured the participants' literal comprehension of the text, whose results showed that they did not have problems with the level presented in the text. Thus, this could be considered an advantage for low level readers. There is also the possibility that the participants could have guessed the correct answer, when they had difficulty understanding the language in at least 25% in relation to the main ideas or the answers proposed.

As regards performance in recognition tests, further explanations for that are offered by Tomitch (1991). The author carried out a study in which a recognition test in the form of true or false statements was applied and, similarly to the present results, no effects were observed, which means negative results. The author explains that "one possible explanation for the no effect of the treatments on true / false statement (recognition test) scores is that the subjects could be guessing and still have 50% of a chance to get the item right"(p.61).

In the present study, there were four alternatives, so participants had a 25% chance of being correct. Tomitch (2000) also carried out another study in which it is argued that true/false statements and multiple-choice tasks do not usually require readers to read beyond the text surface. It is thus possible to conclude that recognition tests such as the multiple-choice test, as used in the present study and true/false statements may not have been helpful to measure the effectiveness of pictures in L2 text for basic level readers.

In addition to the above arguments, Tumolo (2005) argued that for collecting validity evidence some limitations through the process may be provided. According to him, one of the limitations concerning results in tests was: "different test takers may use different skills and/or strategies to solve the same tasks" (p.88).

4.3 Free Delayed Recall

Before showing the results, it is important to retake some information about the way the propositions were measured in this test.

Similarly to the free immediate recall, the measures adopted for this phase were based on maximum values of 80% for the main propositions and 20% for the secondary propositions. The maximum total value was found by adding the final scores from main and secondary propositions, which represented 100% of the recall tests.

Results obtained from the main propositions showed some significant differences regarding the scores for two groups as compared to immediate recall. Similarly to phase 1, in this phase the PRG performed better than the other groups. As expected, the WPG (39.99%) performed better than the NPG (29.70%), contrary to phase 1. Table 7 below presents these results.

Table 6 – Delayed Recall: Main propositions (average per group)

PRE- READING GROUP		WITH-PICTURE GROUP		NO-PICTURE GROUP	
P1	57.14%	P5	45.71%	P9	22.85%
P2	34.28%	P6	45.71%	P10	34.28%
P3	57.14%	P7	45.71%	P11	34.28%
P4	34.28%	P8	22.85%	P12	11.42%
				P13	45.71%
Average	45.71%		39.99%		29.70%

P1....P13=participant

In terms of secondary propositions, as it can be observed, both PRG and WPG had higher scores as compared to NPG. Table 8 below shows the groups' scores, respectively.

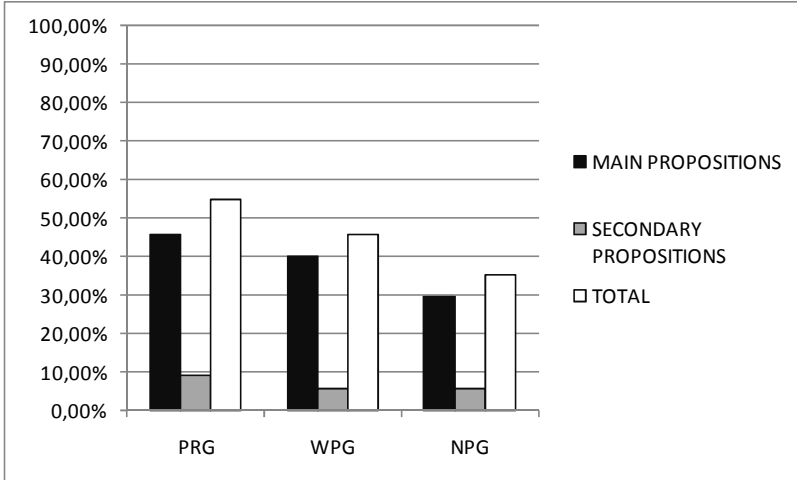
Table 7 – Delayed Recall: Secondary propositions (average per group)

PRE- READING GROUP		WITH- PICTURE GROUP		NO- PICTURE GROUP	
P1	11.42%	P5	5.71%	P9	8.57%
P2	5.71%	P6	2.85%	P10	2.85%
P3	17.14%	P7	8.57%	P11	14.28%
P4	2.85%	P8	5.71%	P12	0%
				P13	2.85%
Average	9.28%		5.71%		5.81%

P1... P13 = participant

Graph 3 below presents the general results in terms of free delayed recall for both main and secondary propositions:

Graph 3 : General results from the free delayed recall



PRG= 54.99% **WPG= 45.7%** **NPG= 35.55%**

PRG = Pre-Reading Group

WPG = With-Picture Group

NPG = No-Picture Group

The general results presented above show that participants from the PRG had a significant higher scoring (54.99%), in both phases, as compared to the WPG (45.7%) and the NPG (35.55%).

According to Kintsch and van Dijk (1978), a situation model is basically the result of comprehension, which in turn is a mental representation of the text. The macrostructure level considers the construction of a general understanding of the text based on background knowledge, a process which may provide a representation of what was read, an issue that can be evaluated through a delayed recall task. Considering that, although the participants from all groups recalled better in the second phase, neither the PRG nor the NPG presented significant differences in their recall from the immediate to the delayed test. In addition, as for the delayed recall, the WPG recalled more ideas in relation to the immediate recall task. This improvement could be explained according to the situation model theory following the macrostructure idea. In this case, the reader will “reconstruct” information given in the text by making inferences using his/her world

knowledge (Kintsch & van Dijk, 1978). That is to say, it is probably the case that the participants of the above mentioned group used world knowledge and the information stored (available) in long term memory, to recall the text one week later.

It is also possible that the participants of this group recalled information stored relying only on the pictures and used it as the main cue to recall, signaling not to have recalled the text itself constructing thus an inconsistent situation model, as shown in the discussion section.

Taking into account the quantitative results which showed better recall for two groups, the PRG and the WPG, in the delayed recall, it is possible to acknowledge that the findings concerning free recall also corroborate the study conducted by Schallert et al (1980). Similarly to the procedures in the present study, part of the experiment in their research was based on recall and multiple-choice test using texts with and without illustrations. However, instead of having adults they were applied to a group of children. Her findings showed evidence that children learned more information in the picture condition text than the no-picture groups. The author draws some conclusions saying that:

Pictures help the reader learn and comprehend a text when they illustrate information central to the text, when they represent new content that is important to the overall message, and when they depict structural relationships mentioned in the text (Schallert et al, 1980, p.514).

Therefore, the findings above are used as an attempt to better analyze the results in the present study which demonstrated that, when used for basic EFL readers, the instructional text applied with pictures for the WPG helped students with certain limitations.

Findings in the research carried out by Glenberg and Langston (1992), as reviewed in chapter II, also presented some relevant issues that deserve considerations. In one of their claims regarding the facilitative effect of pictures, the authors emphasize that the picture must support an appropriate mental model rather than only having the step names available during reading. These beneficial effects would represent better conditions for the reader in the process of inference making. Thus, the present findings are also consistent with those of Glenberg and Langston (1992).

The Dual Coding Theory (DCT) proposed by Paivio (1986), may also contribute to findings in relation to the delayed recall task since it has also been extended as an account of reading comprehension

(Sadoski & Paivio, 1994; Sadoski, Paivio, & Goetz, 1991, as an account of written composition (Sadoski, 1992), and as a unified theory of reading and writing (Sadoski & Paivio, 2001); as cited in Sadoski & Paivio, 2004). One of the discussions brought by the theory is that when information is presented both verbally and visually, it has a better chance of being remembered, providing the reader with a better recall. As regards this argument, these ideas are based on the concept of imagery and reading comprehension. Imagery can be defined as a process by which readers' behavior is analyzed after they have pictured an image in their minds while/or after reading a text. The theory claims that information is stored in long-term memory both as verbal propositions and as mental images. Analyzing this perspective, it is possible to say that, as for the delayed recall, the use of illustrations (non-verbal code) may have assisted the participants to form a mental representation of the text (verbal code) one week after the immediate recall task, providing evidence which reinforces the assumption that pictures may facilitate reading comprehension for basic level readers.

4.4 General Results: Free Immediate Recall x Free Delayed Recall

In this study, when comparing the final results, the PRG had the best performance both for the immediate and delayed recall. Moreover, the results revealed that the PRG recalled better during the delayed recall than the immediate recall. Although the WPG and NPG had a weaker performance, they also recalled better in this phase. More specifically, the WPG, which had achieved 31.41% in the immediate recall, improved the final scores in about 15% in the second phase. Furthermore, the WPG recalled better than the NPG with a difference of about 10% higher scoring. An excerpt from a participant (P5) of the WPG is necessary in order to compare his performance in both phases:

Immediate recall:	Have your house bright.
Delayed recall:	Quando sair de casa, tente deixar alguns aparelhos ligados e lâmpadas acesas.

Besides the fact that s/he wrote a more complete idea as compared to the immediate recall, the number of propositions recalled by this same participant was quantitatively higher in the second phase. One possible explanation here is that because s/he chose to write in L1

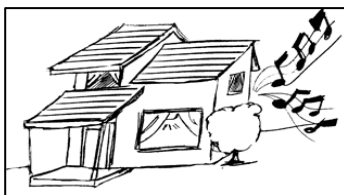
in the second phase, s/he must have felt more confident. Also, under less pressure s/he could, thus, access the content of long-term memory more easily.

Still in relation to the delayed recall, however, taking into account the “not-so-effective” results, it is possible to point out some issues concerning the performance of the WPG from a participant from this group, who may have relied more on the pictures, as shown in the excerpt below.

Original excerpt:
P6 (WPG):

The sound of a television or radio also helps.

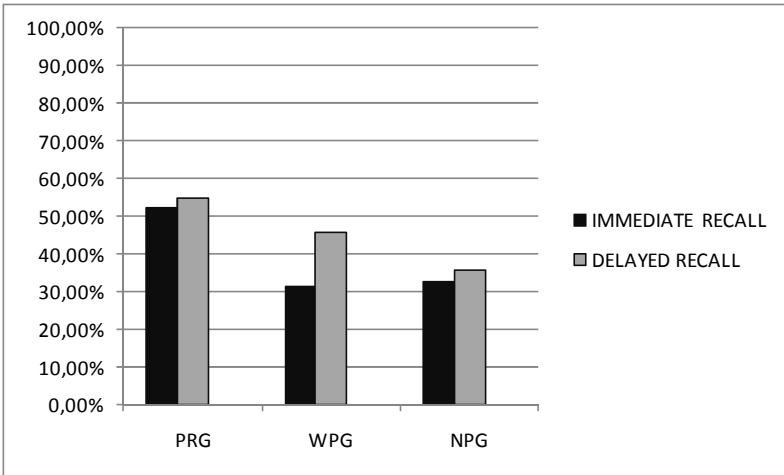
Uma das maneiras de se proteger é fechando janelas e portas e ligando o alarme.



The picture which s/he referred to was actually related to an extract of the text which instructed the reader to leave some electronic device activated to give the impression that there is someone at home. The fact that this participant could have relied only in the picture, could be explained by the construction of an inconsistent situation model, which signaled that he/she did not recall the text itself. In other words, the participant could have observed more the pictures and tried to guess the text, elaborating away from the text. This leads to the issue that only presenting an illustration accompanying the text may not provide an effective result.

Next, Graph 4 presents the final scoring found among the three groups:

Graph 4: General results of the Immediate x the Delayed recall tasks



PRG = Pre-reading Group

WPG = Picture Group

NPG = No Picture Group

	IMMEDIATE RECALL	DELAYED RECALL
PRG	52.13%	54.99%
WPG	31.41%	45.7%
NPG	32.55%	35.51%

It has been common sense among some researchers that pre-reading activities may benefit learners' comprehension. Moreover, the use of illustrations may activate previous knowledge during the reading process (Gagné et al, 1993). The pictures were presented as a pre-reading activity to one group (PRG) and accompanying the text for two groups of participants (WPG and PRG) in order to elicit the participant's ideas on the subject to be presented and therefore activate background knowledge, exercise which could help the participants to make inferences. As already explained, this activity was applied in Portuguese (L1) so that each participant could feel more confident when responding to it, as data shows below:

Teacher: “...é um texto, a gente vai falar sobre um texto, mas o que vocês acham que está sendo abordado...o que estaria sendo abordado nesse texto?”

Participant: “a gente imagina que o alarme está disparando”

Teacher: “Pensem num texto e vocês têm que criar o título do texto, que título, olhando pra essas imagens ... (professora organiza as imagens) .Que título vocês criariam pra esse texto que vocês iriam ler?...Vamos pensar..eu vou escrever um ou dois..vocês podem chutar gente, não se preocupem tá? A idéia é realmente saber o que o que o aluno imagina quando ele olha que a gente tá tentando fazer uma atividade pra entrar em um assunto.

Participant: “está relacionado a sistema de segurança, né?”

Teacher: “sistema de segurança” (prof. escreve no quadro) ...
“Então vamos supor que o seu título seria sistema de segurança”. Mais algum título?

Participant: “Pra mim está relacionado com assalto, disparou e ele ligou...”

Although the groups were not higher level and thus their process of making inferences/elaborations could be reduced, results from the PRG were considered positive as compared to the other two groups. According to Gagné et al (1993) elaborations refer to the process that takes place when the reader brings his/her previous knowledge to integrate the new information presented in the text. These processes imply drawing inferences, and rely on implicit information in the text. The pre-reading group may have used background knowledge in both phases in order to connect the ideas in the surface text with the text itself and the pictures that accompanied the text. Such processes may have

given them the chance to elaborate in the immediate recall since most PRG participants' answers were more complete than the other two groups, the WPG and the NPG. The following instances are brought in order to illustrate this point:

Participant 3 (PRG): “You should (sic) check the security in your home, talking (sic) to the police where is the (sic) most vulnerable place”.

Participant 2 (PRG): “...lots of things to protect me like: ...never say in the (sic) answering machine that (sic) there isn't anyone at home”.

The participants included both main and secondary ideas in the recall (sentence) as well as most of their propositions were related to the pictures presented.

Participant 7 (WPG): “The text shows different possibilities (sic) ... you will be (sic) safe if you protect your home”.

Participant 9 (NPG): “Have light bulbs to illuminate the house”.

Both participants of the No-Picture and the With-picture group above, although having recalled a main proposition, did not recall the secondary proposition. Moreover, all propositions recalled by these participants were written in a more summarized manner. Similar verification applies for 3 out of the 5 participants from the NPG.

Because pre-reading activities may activate background knowledge, which is essential for the processes of inferences, as previously stated, other findings in relation to the production of elaborative inferences deserve some attention. Curiously, the participants of the three groups used for this study elaborated with information which was not present in the text, that is, they elaborated away from the text. An interesting finding is that only two participants made these inferences in the immediate recall. This finding is, in fact, expected since during the immediate recall, the content of the text is still fresh in working memory, whereas during the delayed recall information had to be reinstated from long term memory to working memory,

possibly giving more use to elaborations (Tomitch, 2003). The difference between elaborations and valid inferences supports the extent to which comprehension was achieved, what the participant was able to recall or not. Therefore, there seems to have certain elements which explain the fact that the number of elaborative inferences was higher in the delayed recall.

Still in relation to the delayed recall, findings showed that some participants wrote in a summarized or incomplete manner, an issue which was more related to the NPG in the immediate recall, as data below show:

Immediate recall

- P11 (NPG): “Make (sic) friendship with your neighbors”.
 P12 (NPG): “Invite neighborhood to (sic) your house”.
 P13 (NPG): “You need (sic) to have a phone of the police for some dangerous (sic) situation”.

Delayed recall

- P3 (PRG): “Quando sair, avisar um vizinho ou amigos”.
 P5 (WPG): “Se for viajar, avise a vizinhança”.
 P6 (WPG): “Uma das maneiras de se proteger é fechando as janelas e portas e ligando o alarme”.
 P7 (WPG): “Recomendava que avisássemos a polícia quando sair de férias”.
 P9 (NPG): “Avisar aos vizinhos que está saindo”.
 P10 (NPG): “Fechar bem as portas e janelas, deixar um cachorro solto e ativar o alarme antes de sair”.
 P13(NPG): “Avisar para a segurança onde deve olhar caso aconteça algo”.

The type of inferences produced by the participants above could be explained as follows. The participants may have relied only on the pictures. However, the fact that only one participant of the PRG made this kind of elaborations while three of the WPG performed the same, may reinforce that, at this point, the pre-reading activity was beneficial and helped the readers to write better constructed propositions.

It is also possible to relate these elaborations to van Dijk and Kintsch (1983; as cited in Tomitch, 1995) who propose that elaborations are inferences which occur when the reader uses his/her knowledge

about the topic under discussion to fill in additional detail not mentioned in the text, or to establish connections between what is being read and related items of knowledge (p.51). In this sense, the elaborations could be considered beneficial. However, elaborative inferences may also be produced to cover up an inability to recall details of the original text and, therefore, not as beneficial for comprehension. The present findings may corroborate those found by Tomitch (1995) in which the effects of elaborative inferences were discussed. In her studies, results from text recall showed that, in general, both groups -better and weaker readers – tended to relate the information in the text and to provide elaborative inferences (p.89). In fact, three of her subjects seemed to have presented overreliance on prior knowledge establishing the effects of elaborative inference as being positive for better readers and negative for weak readers

4.5 Retrospective Questionnaire

Data gathered from the retrospective questionnaire aimed at looking for further answers through which participants could give their general perception in relation to the text as well as on the easiness or difficulty they encountered when reading it. Thus, it was a helpful tool since it helped to understand the results on the free recall (immediate and delayed) and multiple-choice tests. I will now report on the following aspects: level of difficulty, level of familiarity and what made the reading of the text easy or difficult. As previously mentioned, the written interview was applied in L1 (Portuguese) in order to avoid problems with L2 writing, having in mind that participants had a low level of proficiency (basic level).

Regarding question 2, which focused on the difficulty and/or the easiness of the text: “Is the text difficult? Why? / Why not?” (“*O texto é difícil? Por que / Por que não?*”), all participants from the PRG and the WPG considered the text clear and easy to understand.

Participant 3: (PRG): “Não. Porque ele explica de forma clara como ter segurança e sua casa”.

Participant 4: (PRG): “Não, pois trata-se de um tema cotidiano, e não há nada muito complicado de entender. As figuras também ajudaram um pouco”.

Participant 7: (WPG): “Não, pois grande parte do vocabulário já foi aprendido em sala”.

When comparing the answers from both groups above, it can be argued that to a certain extent the participants who had pictures in their texts were somehow more confident when giving their opinions. On the other hand, in relation to the NPG (the no-picture group), although 4 out of 5 participants pointed that the text was not difficult, four of them used words which implied some level of difficulty, as if they were not so comfortable with the text, as the excerpts below show:

Participant 10 (NPG): “Não, porque está bem específico, embora em algumas partes complique um pouco”.

Participant 11 (NPG): “Mais ou menos, algumas vezes o texto fica confuso, pois há uma reunião de palavras desconhecidas”.

In relation to question 8, which focused on the level of familiarity of the content, a scale from 1-very familiar to six - very unfamiliar was given. When asked: “Was the way the subject was dealt with in the text familiar to you? How would you rate it on a scale from 1 to 6?” (*O modo como o assunto foi abordado no texto foi familiar para você? Como você avaliaria em uma escala de 1 a 6?*) only participants in the PRG were all in the same scale (2), showing that they considered the text content very familiar, while the WPG and NPG’s answers ranged from scale 1 to 4. Taking these not-so-clear results into account, they still show that the two groups, WPG and NPG, considered the text between very familiar and familiar.

In relation to question 7, about possible details that could have helped the participants: “What made the reading of the text easy or difficult? Explain.” (*O que tornou a leitura do texto fácil ou difícil? Explique.*), which was particularly this researcher’s greatest curiosity, showed that 3 of the 4 participants from the PRG recognized that the use of pictures facilitated their comprehension.

Participant 1 (PRG): “Fácil, as figuras, pois a medida que eu ia lendo olhava a figura para ter certeza que estava entendendo”

Participant 4 (PRG): “As figuras mostraram exatamente o que era necessário ser feito, em cada tópico. Isso facilitou um pouco, apesar de não terem sido tão essenciais”.

Regarding the WPG however, only one out of 4 participants from this group recognized the pictures as being helpful while the other 3 considered the vocabulary and the language easy and simple.

Participant 5 (WPG): “As imagens ajudam na compreensão, já que não conhecia algumas palavras”.

Participant 6 (WPG): “A linguagem simples, com uso de palavras conhecidas”.

Three participants from the NPG considered the text difficult through varied explanations, which might signal a problem that could have been solved with the use of pictures. Two participants answered that the vocabulary and the manner the words appeared in the text made it comprehensible. Thus, results were not conclusive for this group, since each participant had a different answer, ranging from vocabulary to personal reasons, as it is shown in the excerpts below.

Participant 9(NPG): “Dificuldade em algumas palavras, mas o contexto é compreensível”.

Participant 10(NPG): “O vocabulário, algumas palavras pareciam não estar bem encaixadas”.

Participant 13 (NPG): “Não dormi direito noite passada, estou com muito sono e cansado”.

In quantitative terms, a summary concerning a general average per group in relation to the answers to the “Retrospective Questionnaire” is presented.

Table 8: Retrospective Questionnaire – Average per group

1- A leitura do texto fluiu bem? Por que/Por que não?

PRG	100% sim, o vocabulário era fácil;
WPG	100% sim, o texto apresentava linguagem simples;
NPG	3 dos 5 participantes responderam sim, o tema é objetivo e o vocabulário fácil. P13 alegou estar cansado, sem concentração. P12 respondeu Não, por ser pressionado para responder e falta de conhecimento do vocabulário.

2- O texto é difícil? Por que/Por que não?

PRG	100% Não , pois estava escrito de forma objetiva e clara.
WPG	100% Não , a linguagem era clara/ tema cotidiano
NPG	03 participantes responderam: “Não, contexto compreensível”. P11 respondeu: “Mais ou menos, o texto fica confuso”; P12 respondeu não , porém resultados não são bons quando há pressa.

3- Que nota você daria em uma escala de 1 a 6?

Very easy very difficult

1 () 2 () 3 () 4 () 5 () 6 ()

PRG	100% respondeu na escala 2(x)
WPG	50% respondeu escala 2 (x), P5 respondeu 4 (x), P6 respondeu 3(x)
NPG	4 responderam escala 3(x) e P9 respondeu 2 (x)

4- Você diria que este texto está bem escrito? Por que/Por que não?

PRG	100% sim, consegue alcançar o objetivo/idéias organizadas;
WPG	100% sim, fácil de entender
NPG	100% sim, fácil de entender, o texto está claro.

5- Você acha que o autor atingiu o objetivo desejado?

PRG	100% sim.
WPG	100% sim
NPG	04 participantes responderam sim. P12 respondeu: “Não sei qual é o objetivo dele”

4.6 Readdressing the Research Questions

The present study pursued answers to three research questions, which will now be restated and answered in the light of the results obtained.

Research Question 1

• Does the use of pictures produce better recall, for both immediate (right after reading) and delayed recall (one week after the encounter)?

The main goal of research question 1 was to confirm (or not) the effectiveness of illustrations for L2 readers during the recall test both immediately after and one week after the reading of the text.

Findings from the tests used in the present study show that in general terms the use of illustrations seems to have produced better recall, for both immediate and delayed recall, **when** a pre-reading activity with illustrations was applied.

Drawing attention first to the immediate recall, findings from the WPG and the NPG may provide, at least, two pieces of evidence. The first one is strictly related to the WPG and the assumption that pictures facilitate text comprehension. In this case, contrary to this assumption, the propositions found during the recall from participants of this group showed that just having the pictures to support the instructional text was not enough to help with a better recall. The second piece of evidence is related to the NPG, the control group. The fact that the participants of this group scored slightly higher than the WPG was somewhat surprising, even though such results do not show a significant difference.

Moving on to the delayed recall task, when comparing the findings from the immediate recall test with the participants' performance with the delayed recall test, the results obtained in the present study suggest that, in general, the participants of all groups recalled better in the delayed recall than in the immediate recall phase. The fact that the readers who had pictures accompanying the text not only scored higher but they also made more inferences, may suggest a significant result showing that the WPG's participants were benefited by the use of illustrations one week after the first task. In addition, if one observes the performance among the three groups, the PRG had an overall better performance than the WPG and the NPG for the two

phases of the recall assessment. However, the fact that the WPG not only had a significant better performance but also recalled better than NPG in this phase, showed that the assumption that pictures help comprehension was confirmed in the delayed recall.

Concluding the analysis on the research question 1, it is possible to say that, in general, the use of pictures was considered more effective in the delayed recall rather than in the immediate recall.

Having answered research question 1, the answer to research question 2 is provided.

Research Question 2

• Does the use of images produce better comprehension, as measured by multiple-choice questions?

As already mentioned, the overview provided shows that there are no significant differences in EFL text comprehension with or without pictures as measured by the multiple-choice test. Participants, in general, seemed to be able to find the correct answer in the multiple-choice test. They could have possibly relied either on the pictures or the vocabulary, which had been adjusted to a lower level. This can be reinforced by the final scoring from one of the participants, P7 from WPG, who had low scores in the other tests except for the multiple-choice task. Therefore, the fact that the text was adapted to the level of participants seems to have negatively affected the actual results for this specific test. One possible speculation could point to the possibility of participants having guessed the answers. These considerations are based on the actual final scoring that showed a remarkable higher scoring as compared to the free recall results.

To sum up, due to the higher scores for all groups, there were no significant effects on the variables used: with or without pictures, in relation to their performance in the multiple-choice test.

Research Question 3

- **To what extent do pre-reading activities, with pictures, facilitate L2/EFL readers' comprehension with low(er) level of proficiency?**

One of the main goals of this research was to investigate whether/to what extent pre-reading activities facilitate EFL readers' comprehension. A group of participants in the present study were exposed to a pre-reading activity with the illustrations which were also presented in the with-picture text. The assumption on whether this tool would help readers' comprehension was confirmed according to results obtained in all the procedures applied. In other words, it is possible to say that, according to the results obtained, the pre-reading group (PRG) outperformed the other two groups, the WPG and the NPG, presenting the best results for both the multiple-choice and the free recall tasks.

The fact that L2 readers with the pre-reading activity achieved better results in the tests suggests that the use of pictures as support, as it has been claimed in other similar studies, was beneficial for the participants of the PRG, as it was expected. Such conclusions are based on the fact that, in relation to the propositions recalled, scoring for this group was 52.13% in the immediate recall and 54.99% in the delayed recall whereas the WPG and the NPG achieved an average score of 35%, as already reported.

In general terms, the findings on to what extent pre-reading activities may benefit EFL readers also corroborate a previous research conducted by Tomitch (1991). Her results confirmed that all the three pre-reading activities, that is, (PS) possible sentences, (RP) request procedures and PS + RP applied in order to measure comprehension through open-ended questions, improved the readers' comprehension.

In relation to these positive results, it fair to suggest that a pre-reading activity with pictures could be used as a tool to help during the reading process by connecting the elements present in the text and his/her background knowledge. These tools could help students to improve comprehension when reading a text either in L1 or L2. In other words, the activity aforementioned may help a student to retrieve the appropriate information, which could be effective for EFL beginning readers.

The next chapter will provide the final considerations, limitations as well as the pedagogical implications.

CHAPTER V

Final Remarks, Limitations, Implications and Suggestions for further research

5.1 Final Remarks

The aim of this study was to investigate the facilitative effects of illustrations in EFL readers' comprehension. The main assumption was that illustrations may facilitate text comprehension for EFL readers with a basic level of proficiency. For that, a pre-reading activity followed by three tasks were provided in order to measure whether and to what extent the use of illustrations may be effective during the reading of the text for EFL readers.

The general results for this research showed a tendency for the facilitative effects of illustrations for EFL readers' text comprehension for one out of the three experimental groups. The assumption that pictures help EFL beginning readers to better understand a text was confirmed for the PRG, since the findings indicated that the use of illustrations improved comprehension only for the group which performed a pre-reading activity involving the pictures later used to illustrate the text that would be read.

According to results from the WPG, it was observed that when considering the instructional text used in this study, only having the picture next to the written information was not enough to facilitate comprehension in the immediate recall. In other words, the use of illustrations per se does not facilitate comprehension measured right after reading the text. On the other hand, results from the same group showed that in the delayed recall, the WPG improved comprehension as compared to the immediate recall. However, unexpected results demonstrated that the NPG (the control group) recalled slightly better in the immediate recall as compared to the group which had pictures as support, the WPG.

In relation to schema theory and the role of pre-reading activities for ESL readers, used in the present study, it is possible to draw on Carrell (1984), for instance, who offers a question on whether teachers can improve students' reading by helping them to build background knowledge by presenting pre-reading activities to them. As for the use of pictures, among other activities mentioned by the author, the answer is positive since ESL basic level proficient readers tend to have a limited

vocabulary. She points out that these activities may guide the students to a successful reading. The same comment applies to Tomitch (1991), whose findings also contribute to the importance of schema theory and pre-reading activities in the field of reading.

It is also worth pointing Gyselinck and Tardieu's (1992) findings which indicated that the beneficial effect of illustrations improved the participants' recall and helped the readers to draw elaborative inferences. It was also observed that these beneficial effects were mainly for the low prior knowledge participants.

These findings lead to the conclusion that, when illustrations are used as pre- activities in L2 texts, they may help EFL readers to better understand a text, regardless of their basic level of proficiency. Such conclusions are based on both, the literature presented for this study, as well as the results obtained and which could be considered positive in several manners and levels. As for this researcher, pictures may be presented in a text as a diagram, as a sequence so that steps can be followed, among other possibilities. They may have the goal of helping the reader with vocabulary as well as they may be used to help them to store information so that they may be able to recall it later.

5.2 Limitations of the study and suggestions for future research

This study presented some limitations which could be worth pointing out. First of all, the number of participants was considered small. There were 13 participants in the second phase while there were 18 participants in the first phase. Regarding the decision that this researcher made about not using the 5 participants who were absent in the delayed recall task, it could have somehow affected the quantitative results. On the other hand, this researcher considered that even though having a smaller number of participants, the analysis for both immediate and delayed recall could become more reliable in the final results. For that reason, the possibility of running this experiment with a higher number of participants and two different levels could be considered in future studies.

In relation to the issue that all groups had better results in the delayed recall rather than in the immediate recall, leaves a doubt on the role played by the pictures for the participants who chose to answer the recall in L1(Portuguese) contrary to the immediate recall when they all answer in L2 (English). Such fact, called this researcher's attention. What if they had chosen to write in L2, following the same procedure

adopted in the first encounter? This decision may have disturbed or even hidden more clear results in relation to the delayed recall if taking into account that the language use changed in the course of the tests.

5.3 Pedagogical Implications

The effort in this study was to come up with results which showed the power of illustrations as being support but similarly being important to help with vocabulary use and difficulties with language use. Several studies have claimed that illustrations in general are considered to be useful as an educational tool for students in the processes of learning a language, as we have lived in a time when technology has constantly brought changes such as the use of the internet and all the visual information in which people have been exposed to everywhere (Goldstein, (2008); as cited in New Routes, 2008). Despite the findings concerning the positive effects on illustrated text, it has been argued by Goldstein (2008, New Routes) that as being part of this revolutionary time, pictures are mostly used as a mere support to written texts where, for instance, the first page of a beginner's English coursebook may place a large photo or illustration of two people greeting each other but, students and teachers will tend to focus on the dialogue that appears alongside it, to the extent that the image loses any value turning into a decoration device. One issue to be considered in the pedagogical field is to make actual use of the illustrations presented in this type of material instead of letting them play the role of a mere decoration to the text.

To sum up, this study intended to enhance the ongoing debate on the effect of illustrations on text comprehension in L2. Hopefully, the findings of this investigation may contribute to enrich pedagogical practices for teaching English as a Foreign Language (EFL). The positive results from the pre-reading activity also show that, when used to reinforce L2 text, illustrations may play an effective role for EFL readers.

REFERENCES

- Adams, Marilyn J., & Collins, Allan. (1979). A Schema-Theoretic View of Reading. In *New Directions in Discourse Processing, Vol. 2: Advances in Discourse Processes*, ed. Roy O. Freedle. Norwood, NJ: Ablex.
- Aebersold, J.A., & Field, M. L. (1997). *From Reader to Reading Teacher: Issues and strategies for second language classrooms*. Cambridge, UK: Cambridge University Press.
- Andrews, J., Scharff, L., & Moses, L. (2002). *The Influence of Illustrations in Children's Storybooks*. Vol. 23(4), 323-339.
- Buratini, Diana. (2004). *Os Recursos Visuais na Compreensão de Leitura em Língua Estrangeira: Reflexões Sobre Exames de Vestibular*. Dissertação de Mestrado. Campinas: UNICAMP.
- Carney, R. N. & Levin, J. R. (2002). *Pictorial Illustrations Still Improve Students' Learning from Text*. *Educational Psychology Review*, Vol. 14. 5-26.
- Carrell & Eisterhold (1998). Schema theory and ESL reading pedagogy. In Carrell, P, Devine, J & Eskey, D. (Eds.) *Interactive approaches to second language reading*. Cambridge, UK: CUP.
- Chia, H. L. (2001). Reading Activities for Effective Top-down Processing. *FORUM* vol 39 No1 January March 2001 p 22.
<http://www.readingmatrix.com/articles/ajideh/article.pdf>
- Clark, J. M. & Paivio, A. (1991). *Dual coding theory and education*. *Educational Psychology Review*, 3(3), 149-170.
- Chan, L. K. S., Cole, P. G., & Morris, J.N. (1990). *Effects of Instruction in the Use of a Visual – Imagery Strategy on the Reading-Comprehension Competence of Disabled and Average Readers*. *Learning Disability Quarterly*, Vol.13(1), 2-11.
- Davies, F. (1995). *Introducing Reading*. London: Penguin Group.
- Denburg, S. D. (1976, 1977). The interaction of picture and print in reading instruction. In R. J. Spiro, B.C. Bruce, & W.F. Brewer (Eds.), *Theoretical issues in comprehension instruction* (pp. 503-525). Hillsdale, NJ: Lawrence Erlbaum.

- Gagné, E., Yekovich, C. & Yekovich, F. (1993). *The cognitive psychology of school learning*. New York: Harper Collins College Publishers.
- Glenberg, A. M., & Langston, W. E. (1992). *Comprehension of Illustrated text: Pictures Help to Build Mental Models*. *Journal of Memory and Language* 31, 129-151.
- Goodman, K. (1970, 1988). In Davies, F. (1995). *Introducing Reading*. London: Penguin Group.
- Gyselinck, V., and Tardieu, H. (1999). *The role of illustrations in text comprehension: What, when, for whom, and why?* In van Oostendorp, H., and Goldman, S. R. (eds.), *The Construction of Mental Operations During Reading*, Erlbaum, Mahwah, NJ.
- Hegarty, M., & Just, M. A. (1993). *Constructing Mental Models from Text and Diagrams*. *Journal of Memory and Language* 32, (pp.717-742)
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. New York: CUP.
- Kintsch, W. & Franzke, M. (1994). *The Role of background Knowledge in the Recall of a News Story*. In Lorch & O'Brien, E. J. *Sources of Coherence in reading*. New Jersey, USA: LEA.
- Kintsch, W. & van Dijk, T.A. (1978). *Toward a model of text comprehension and production*. *Psychological Review*, 85, 363-394.
- Kress & Van Leeuwen: *Reading Images*. (1996). In D. Buratini. *Os Recursos Visuais na Compreensão de Leitura em Língua Estrangeira: Reflexões Sobre Exames de Vestibular*. Dissertação de Mestrado. Campinas: UNICAMP.
- Mayer, R. E., & Gallini, J. K. (1990). *When an illustrations worth ten thousand words?* In van Oostendorp, H., and Goldman, S. R. (eds.), *The Construction of Mental Operations During Reading*, Erlbaum, Mahwah, NJ.
- Paivio, A. (1986). *Mental Representations*. New York: Oxford University Press. In Sadoski, M. & Paivio, A. (2004). *A dual coding theoretical model of reading*.
- Ringler, L. H. & Weber, C. K. (1984)...a language –Thinking Approach to Reading. San Diego: Harcourt Brace Jovanovich, Ink.
<http://www.readingmatrix.com/articles/ajideh/article.pdf>

- Rumelhart, D. E. (1977). *Toward and Interactive model of Reading*. In S. Dornic (Ed.) *Attention and Performance VI* (pp. 575-603). Hillsdale, NJ: Lawrence Erlbaum.
- Samuels, S. J. (1967). Attentional process in reading: The effect of pictures on the acquisition of reading responses. In R. J. Spiro, B.C. Bruce, & W.F. Brewer (Eds.), *Theoretical issues in comprehension instruction* (pp. 503-525). Hillsdale, NJ: Lawrence Erlbaum.
- Schallert, D.L. (1980). The role of illustrations in reading comprehension. In R. J. Spiro, B.C. Bruce, & W.F. Brewer (Eds.), *Theoretical issues in comprehension instruction* (pp. 503-525). Hillsdale, NJ: Lawrence Erlbaum.
- Stanovich, K. (1980). *Toward an interactive-compensatory model of individual differences in the development of reading fluency*. *Reading Research Quarterly* 16: 32-71
- Tomitch, LMB. (1991). *Schema activation and reading comprehension*. Master's thesis.
- _____ (2003). *Reading: text organization perception and working memory capacity*. Doctoral dissertation. Florianópolis: ARES
- Tumolo, C. H. S (2005). *Assessment of Reading in English as a Foreign Language: Investigating the Defensibility of Test Items*. Doctoral dissertation. Florianópolis: UFSC
- Trabasso, T., Graesser, A. C., & Magliano, J. P. (1999). *Strategic Reading During Comprehension*. *Journal of Educational Psychology* 4,615-629.
- Van Dijk, T.A. & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press.
- Walter, Catherine. (1994) *Genuine Articles: Authentic texts for intermediate students of American English*. Cambridge University Press.

APPENDICES

Appendix A

(Original version)

2 How to protect yourself

This is part of a magazine article. Read it carefully, as many times as you want, and don't hesitate to stop to think about what you've read.

At Home

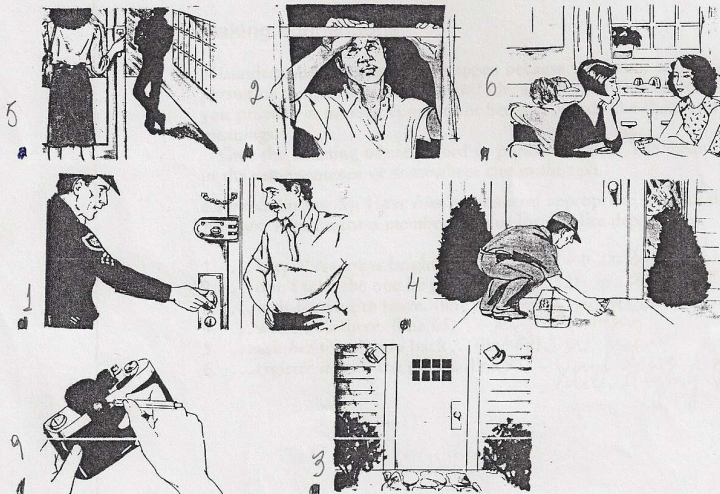
- 1. *Have a home security checkup.* Ask that a member of your local police department inspect your home and show you which areas are most vulnerable to an intruder. Have him recommend appropriate security devices.
2. *Secure exterior doors and windows.* Replace glass-paned doors with those made of solid wood. Install double-cylinder dead-bolt locks (which must be opened with a key from either side of the door) on all exterior doors, and make sure door hinges have non-removable hinge pins. French doors or other sliding doors that operate on tracks should be made of shatterproof material and kept locked at all times. As an added measure, wedge a broomstick handle on the inside track (cut to fit) — the door will not slide open even if the lock is forced.
- Make sure all windows — especially those obscured by bushes — are locked securely. Locking devices vary depending on the type of window. Consult your local hardware store about which kind will be most effective for you. Also, be sure to secure air conditioners so they cannot be pushed in.
3. *Illuminate your home and property.* Position 100-watt bulbs or floodlamps at the front and rear of your home. If you use a side drive or garage, keep these areas brightly lit. Burglars can easily hide out in high shrubbery, so be sure to cut back any bushes near the entrances to your house.
4. *Never open the door to someone you don't know.* Instead, check the caller's identity through a window or door peephole. DO NOT TRUST CHAIN LOCKS — they're easily forced open. If a stranger claims it's an emergency and needs to use your phone, don't be persuaded — tell him to wait outside and place the call for him. If he claims to be a delivery or serviceman, ask him to slide his credentials under the door or through the letter box and check thoroughly. Or call his company to verify his identity. Get the phone number from the operator; don't take the one he gives you.
5. *Ask friends to phone before they drop by.* This precaution will save you a lot of anxiety when the doorbell rings. If you live in an apartment, never buzz unidentified persons into your building or let them in when you're entering. If you see a suspicious-looking person in your lobby, don't enter. Call a neighbor to escort you in, or wait for him to leave.
6. *Let friends know when a repairman is coming to your home.* Invite a neighbor over for coffee or have a friend telephone while he's there. If you feel uncomfortable, trust your instincts. Call a friend and pretend you'll be late for a date (let her know there's a stranger in your home) and ask her to call you back in five minutes — giving you the opportunity to ask for help.
7. *If a visitor starts behaving suspiciously or makes a threatening gesture, get out!* Scream FIRE! or POLICE! to attract your neighbors' attention, and run to the nearest public place or neighbor's home. The point is to remove yourself from a potentially dangerous situation at once.

Unit 2 How to protect yourself

- 80 8. Give the impression that someone is home when you go out. Activate interior lights with timers set to go on and off alternately in different rooms. The sound of a television or radio on in a house or apartment also helps – these can be timer-activated too.
- 85 9. Engrave valuable items, expensive appliances and tools with an identification number. Use your driver's license or other identifying number and register it with the police. Keep a list of the engraved possessions in your safe-deposit box.
- 90 10. Don't advertise the fact that you live alone. List only your last name and first initial in the phone directory. Do the same on your mailbox (or list two
- names, giving the impression that you live with a roommate).
- 110 11. Never give information over the phone to an unknown caller. Instruct your children not to recite your number to a wrong-number caller or give your address over the phone. If you receive a call informing you of some "emergency," ask for a number to call back, then hang up and verify the call. A bogus emergency phone call is a common burglar's ruse to get you out of the house.
- 115 12. If you use a telephone-answering machine, never say you are not at home on your recorded message. Instead say, "You have reached the Browns' residence, but we are unable to talk with you just now."

Summary skills

Here are some pictures illustrating the text. Each one corresponds to one of the numbered instructions in the text, but they are not in order. Match numbers and pictures. Be careful! Some numbers will have no picture.



7

Source: Genuine Articles: Authentic texts for intermediate students of American English. Catherine Walter (1994).

Appendix B

WITH-PICTURE TEXT

WITH-PICTURE TEXT

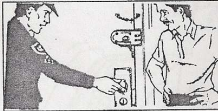
Leia o texto abaixo.

Após a leitura do texto, você deverá escrever frases que lembrar e, em seguida irá responder a um teste de múltipla escolha.

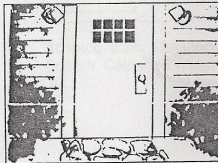
Logo em seguida, você deverá responder a um formulário sobre uma retrospectiva do teste. É importante lembrar que você não terá acesso ao texto enquanto responde aos testes.

How to protect yourself

At home



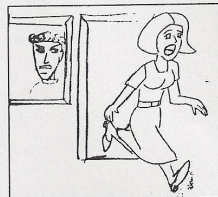
1. *Have a home security checkup.* Ask a member of your local police department inspect your home and show you which areas are most vulnerable to an intruder. Have him recommend appropriate security devices.



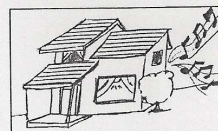
2. *Illuminate your home and property.* Position 100-watt bulbs or flood-lamps at the front and rear of your home. If you use a side drive or garage, keep these areas brightly lit. Burglars can easily hide out, so be sure to cut back any bushes near the entrance to your house.



3. *Let friends know when a repairman is coming to your home.* Invite a neighbor over for coffee or have a friend telephone while he is there. If you feel uncomfortable, trust your instincts.



4. *If a visitor starts behaving suspiciously or makes a threatening gesture, get out!* Scream FIRE! or Police! to attract your neighbors' attention, and run to the nearest public place or neighbor's home. The point is to remove yourself from a potentially dangerous situation at once.



5. *Give the impression that someone is home when you go out.* Activate interior lights with timers set to go on and off alternately in different rooms. The sound of a television or radio on in a house or apartment also helps – these can be timer-activated too.



6. *Never give information over the phone to an unknown caller. Instruct your children not to recite your number to a wrong-number caller or give your address over the phone. If you receive a call informing you of some "emergency", ask for a number to call back, then hung up and verify the call.*



7. *If you use a telephone-answering machine, never say you are not at home on your recorded message. Instead, say, "You have reached the Browns' residence, but we are unable to talk with you just now".*

Adapted from: *Genuine Articles: Authentic texts for intermediate students of American English*. Catherine Walter (1994).

Images 4, 5, 6, and 7 were constructed/adapted by Renato Claro (2009)

NO PICTURE TEXT

Leia o texto abaixo.

Após a leitura do texto, você deverá escrever as frases que lembrar e, em seguida responder a um teste de múltipla escolha.

Logo em seguida, você deverá responder a um formulário sobre uma retrospectiva do teste.

É importante lembrar que você não terá acesso ao texto enquanto responde aos testes.

Você terá _____ minutos para completar toda a atividade.

How to protect yourself

At home

1. *Have a home security checkup.* Ask a member of your local police department inspect your home and show you which areas are

most vulnerable to an intruder. Have him recommend appropriate security devices.

2. *Illuminate your home and property.* Position 100-watt bulbs or flood-lamps at the front and rear of your home. If you use a side drive or garage, keep these areas brightly lit. Burglars can easily hide out, so be sure to cut back any bushes near the entrance to your house.

3. *Let friends know when a repairman is coming to your home.* Invite a neighbor over for coffee or have a friend telephone while he is there. If you feel uncomfortable, trust your instincts.

4. *If a visitor starts behaving suspiciously or makes a threatening gesture, get out!* Scream FIRE! or Police! to attract your neighbors' attention, and run to the nearest public place or neighbor's home. The point is to remove yourself from a potentially dangerous situation at once.

5. *Give the impression that someone is home when you go out.* Activate interior lights with timers set to go on and off alternately in different rooms. The sound of a television or radio on in a house or apartment also helps – these can be timer-activated too.

6. *Never give information over the phone to an unknown caller.* Instruct your children not to recite your number to a wrong-number caller or give your address over the phone. If you receive a call informing you of some “emergency”, ask for a number to call back, then hung up and verify the call.

7. *If you use a telephone-answering machine, never say you are not at home on your recorded message.* Instead, say, “You have reached the Browns' residence, but we are unable to talk with you just now”.

Adapted from: Genuine Articles: Authentic texts for intermediate students of American English. Catherine Walter (1994).

Appendix C

Consent Form

Termo de Consentimento

Universidade Federal de Santa Catarina

Centro de Comunicação e Expressão (CCE)

Pós-Graduação em Inglês e Literatura Correspondente (PGI)

Caro(a) participante,

O estudo e a pesquisa sobre leitura envolvem uma série de métodos e critérios. Dentre eles, a utilização de textos e questionários em ambiente experimental. Tendo em vista os objetivos da minha pesquisa de mestrado, pretendo conduzir pesquisa na área de leitura, voltada mais especificamente para a compreensão de textos. Venho por meio desta, pedir sua colaboração e autorização para participar deste trabalho de pesquisa que visa compreender melhor alguns dos eventos que possam levar ao incremento da compreensão de leitura em L2.

Garanto que os dados fornecidos e coletados serão absolutamente sigilosos e que você não será identificado em momento algum.

Muito atentiosamente,

Rita Sobreira Claro, Mestranda (PGI)

Termo de compromisso

Estou de acordo com o que me foi acima mencionado e expresso aqui minha vontade em participar da pesquisa acima definida.

De acordo: _____

Nome por extenso: _____

e-mail: _____

Florianópolis, 09 de junho de 2009

Appendix E

Multiple choice test: How to protect yourself: at home

Name: _____

Choose the best answer according to the text:

- 1) You can have a home security checkup by:
 - inspecting your home yourself
 - asking the local police to inspect your home
 - asking your neighbors for help
 - paying a private company to do the service

- 2) When using an answering machine:
 - you should never say your last name
 - you shouldn't say you are at home
 - you shouldn't say you are not at home
 - you should leave clear messages

- 3) When a repairman is coming to your house, it's appropriate:
 - to invite a neighbor for coffee
 - to go out with your friends
 - to leave your house alone
 - not to open the door in case he is alone

- 4) In order to give the impression that there is someone at home:
 - It's advisable to leave all doors locked
 - it's a good idea to activate interior lights
 - the television must be off whenever you are away
 - turn all your equipments on

- 5) When having an unknown caller, you should:
 - instruct your children not to give your address
 - receive all necessary instructions
 - ask for the caller's complete name
 - rang off the phone immediately

- 6) Burglars can easily hide out, so be sure to:

- () hide all your belongs
- () illuminate your home and property
- () have only your garage illuminated
- () have all bedrooms illuminated

7) In case you have a visitor behaving suspiciously:

- () try not to show you are afraid
- () try to leave by the back door
- () open the door and ask him to leave
- () scream to call your neighbor's attention

8) The sound of a TV or radio could:

- () give the impression that there are other people in the house or apartment
- () call the burglar's attention even more
- () become a problem to your neighbors
- () decrease the insecurity but increase the electricity bill

Appendix F

Retrospective Questionnaire (Tomitch, 2003)

1- A leitura do texto fluiu bem? Por que/Por que não?

O texto é difícil? Por que/Por que não?

3- Que nota você daria em uma escala de 1 a 6?

Very easy very difficult

1 () 2 () 3 () 4 () 5 () 6 ()

4- Você diria que este texto está bem escrito? Por que/Por que não?

5- Você acha que o autor atingiu o objetivo desejado?

6- Você considera este um texto completo?

7- O que tornou a leitura do texto fácil ou difícil? Explique.

8- O modo como o assunto foi abordado no texto foi familiar para você?
Como você avaliaria em uma escala de 1 a 6?

Very familiar

very unfamiliar

1 () 2 () 3 () 4 () 5 () 6 ()

Nome: _____

Turma: _____

Appendix H

Instructions

The whole group was remained in the room for the researcher's introduction and instructions about the study. After that, they were subdivided so that the activities with each of the three groups could get started.

Instructions: With Picture Group

Leia o texto abaixo.

Após a leitura você deverá fazer um resumo e responder a um teste de múltipla escolha.

Logo em seguida, você deverá responder a um formulário sobre uma retrospectiva do teste.

É importante lembrar que você não terá acesso ao texto enquanto responde aos testes.

Instructions: No Picture Group

Leia o texto abaixo.

Após a leitura você deverá responder a uma atividade livre seguida de um teste de múltipla escolha.

Logo em seguida, você deverá responder a um formulário sobre uma retrospectiva do teste.

É importante lembrar que você não terá acesso ao texto enquanto responde aos testes.

Você terá _____ minutos para completar toda a atividade.

Appendix I

Pre-reading activity (Transcription)

Data collection: May, 2009

Data collected with the third group, the pre-reading group (PRG). There were 4 students/participants in this group.

- Teacher: “Primeiro, antes de começar..sobre esse trabalho eu gostaria de saber de vocês, aah..individualmente, quem quisesse comentar. O que vocês fazem de trabalho sobre leitura....vocês fazem trabalho de leitura e compreensão de texto nas aulas de vocês, aqui no extra-curricular?”
- Participants : answers varied: alguns alunos tentam responder que fazem de vez em quando, ou sem muita frequência)
- Teacher: Fazem....., com que frequência? Ou seria mais como um dever de casa?
- Participants: Just two female participants try to Interact with the teacher/instructor explicando
- Teacher: (acompanhando a explicação tímida de 2 participants) .. “ tem um texto, e esses textos são só a parte escrita ou tem algum auxílio visual?
- Participants: “tem,tem”.
- Teacher: sempre tem?
- Participants: “tem”.
- Teacher: “Então tá, então a gente vai trabalhar primeiro aqui nesse material. Eu gostaria que vocês dessem uma olhada aqui ...hum...nessas imagens. (Pausa) Dêem uma olhadinha, com calma..são quatro imagens primeiro....tá? Verifiquem direitinho...vocês conseguem enxergar direitinho daí?
- Participants: (dúvidas ao ver o primeiro bloco de imagens) “o primeiro... o que é o primeiro?”
- Teacher: O primeiro tem um policial, tem um senhor ao lado..mexendo numa porta,tá?...aah...ok?
- Participants: observação
- Teacher: “Mais alguma pergunta sobre as imagens?” “Não?”
 “Então nós temos um outro grupinho de imagens...(pausa para os alunos observarem as

imagens)... e agora, vou tentar colocar todas aqui juntas pra gente ter uma idéia.

“Então eu gostaria que vocês tentassem imaginar, o que vocês acham...? ...é um texto, a gente vai falar sobre um texto, mas o que vocês acham que está sendo abordado...que estaria sendo abordado nesse texto?”

Participants: “a gente imagina que o alarme está disparando....”

Teacher: “o alarme está disparando, nessa casa aqui”

Participants: (alunos fazem mais observações) a gente pode identificar

Teacher: “uhum... mais alguma coisa, que vocês pudessem...assim..elaborar né? Usar a criatividade. O que poderia está sendo tratado no texto. Vocês acham que essas imagens, elas tem uma relação? Que elas estão interligada, seria uma história, seriam partes separadas, o que vocês pensam, será que elas conseguem se conectar?”

Participant (female): “sim, acho que sim”

Teacher: “acha que sim?”..Então pra finalizar essa parte, me digam se vocês..(professora intervém lembrando que só obteve um feedback).. “ a única coisa que eu ouvi daí foi: “ tem um alarme disparando”

Eu gostaria de saber, se vocês tivessem que fazer um teste agora, então vamos tentar fazer..mas um teste com a própria professora de vocês, e ela desse essas imagens (e diria). “Pensem num texto e vocês têm que criar o título do texto, que título, olhando pra essas imagens ... eu vou até colocar nessa outra ordem aqui tá (professora organiza as imagens, agora no formato original do texto escrito)..que é da forma como elas aparecerão no texto..(pausa)..Que título vocês criariam pra esse texto que vocês iriam ler?...Vamos pensar..eu vou escrever um ou dois..vocês podem chutar gente, não se preocupem tá? A idéia é realmente saber o que o que o aluno imagina quando ele olha que a gente tá tentando fazer uma atividade pra entrar em um assunto, no caso, de uma segunda língua.

Participants: “está relacionado a sistema de segurança, né?” (Kelly)

Teacher: “sistema de segurança” (prof. Escreve no quadro) ..”Então vamos supor que o seu título seria sistema de segurança”. Mais algum título?

Participants: “pra mim está relacionado com assalto, disparou e ele ligou...”

Teacher: uhum, entendi, então para você, o texto estaria relacionado com assalto? (Juliana) (a professora intervém para perguntar os nomes dos participantes que estão respondendo). Então, agora eu vou passar pra vocês (meninas- referencia as alunas que responderam) qual o verdadeiro nome desse texto,tá? (professora escreve) “How to protect yourself, só que ele tem um sub-título... “ At home”. Então esse é o título do texto que você vão ler. A minha pergunta é: a partir do mento que eu dou um título pra vocês, ele faz sentido com as imagens que vocês estão vendo ou vocês falam: “Mas não me ajudou muito, as imagens não me ajudaram muito com esse título, ou então,...o que vocês me dizem?”

Participants: “faz sentido”

Teacher: “faz sentido? É, tem a ver sobre o que a Juliana falou sobre o assalto não é? O sistema de segurança..se eu fui assaltada, se eu não quero ser assaltada eu vou cuidar do sistema de segurança para me proteger na minha casa, na minha residência.

Então, a partir de agora, eu vou dar pra vocês, um texto pra vocês começarem ler. Esse texto vai conter as imagens que eu dei pra vocês... e, tem as instruções aqui por escrito, em português, tá?

(Instruções): Vocês leiam o texto atenciosamente e em silencio. Já tá dizendo o que você vão fazer. Assim que vocês terminarem a leitura, vocês farão três teste(zinhos) pra mim. E eu vou começar a marcar quando eu falar já pra começar a leitura. Eu vou marcar o tempo do grupo de vocês que eu chamo de pre-reading, que eu fiz com as imagens e tal... , pra determinar quanto tempo máximo eu vou determinar pra outra turma..então isso só pra contar, tudo bem? Daí quando...aí quando vocês forem terminando a leitura só levanta a mão pra mim que daí eu já vou passando, eu não vou esperar cada um terminar, aí eu já vou passando os testes pra cada um e quando terminar todo mundo aí vocês voltam pra sala. Tudo bem? Podem começar.

Appendix J

Raters' answers to Text/ Free recall

1

<p>Main (ideas) propositions: The text is about instructions for your safety and the safety of your home. It offers useful advice. It is a good idea to invite local police officer to check your home; How to make sure you do not have safety problems caused by repair people or visitors that behave in a suspicious manner; When you get out it is a good idea to keep a light, TV or other devices on to give the impression that someone is in; It suggests how to behave regards communications over the telephone or answering machine, including how to avoid you or your children letting people know when you are out.</p>
<p>Secondary propositions: Details of how to set up the lighting in your house, and which areas to illuminate more, cutting bushes; Inviting a neighbor over for coffee or have a friend telephone while the repairman is in your house; Exact details what to do in case you are suspicious; Details of what to do when you go out so that it looks that someone is in the house; Advice on how to answer the phone and the message that you should record in the answer machine.</p>

2

<p>Main propositions: Todas as primeiras frases de cada dica.</p>
<p>Secondary propositions: 1- Have him recommend appropriate security devices; 2- Keep these areas brightly. Be sure to cut back any bushes near the entrance; 3- If you feel uncomfortable, trust your instincts; 4- The point is to remove yourself from potentially dangerous situation; 5- Activate interior lights; 6- If you receive a call informing you of some emergency, ask for a number to call back; 7- Instead say " You have reached the Brown's residence...."</p>

3

<p>Main propositions: How a person can protect him/herself and his/her house and also avoid dangerous situations</p>
<p>Secondary propositions: Ways to avoid dangerous situations: put light in</p>

front of your house entrance, ask a security man to come and check the house, leave electronic devices on when you're out, invite a friend over for coffee if there is an electrician in your house, never give your address or phone number to strangers, if you notice dangerous situations, run or shout Fire/Police! To get your neighbors' attention.

4

Main propositions: Todas as primeiras frases;

Secondary propositions: Todas as 2as frases da 1,3,4,5,7. As últimas frases da 2 e 6.