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GRADUATION PAPER

A CASE STUDY INTO READING COMPREHENSION STRATEGIES OF FOURTH YEAR FAST-TRACK STUDENTS AT FELTE, ULIS-VNU

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ABSTRACT

The change in language teaching from teacher-centeredness to learner-centeredness in language classroom has resulted in empirical research on the good language learners, among which is the investigation into learners' strategy. In Vietnamese, learners' chief exposure to English language is through reading, which reinforces the necessity of becoming proficient readers if they want to be a good language learner. Therefore, this research aims to explore students' reading comprehension strategies and find out the differences in strategy use by successful and less successful readers. Two cases from the fast-track division at FELTE, ULIS-VNU were selected for in-depth investigation. The two main instruments of data collection were think-aloud protocols and documents with the former as the main instrument. Triangulation was made between these two types of data while qualitative analysis method was employed to reach the most valid and reliable conclusions. This research yielded significant findings to proposed research questions. The successful reader took an interactive approach to the text while the counterpart approached it mostly from bottom-up. The successful reader was found to employ higher frequency of both metacognitive and cognitive strategy than the less one. More notably, active combination of cognitive strategies and interactive relationship between metacognitive and cognitive strategies were seen almost all the time in the successful reader while absent the less one. Based on these findings, implications were made for the reading classroom and language assessment. "***Modeling what good readers do***" and think-aloud protocols as alternative assessment in reading class are the two significant implications of this research.

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List of ABBREVIATIONS

ULIS   University of Languages and International Studies

VNU   Vietnam National University, Hanoi

FTP   Fast-track program

SR   Successful reader

LSR   Less successful reader

L2   Second language

PART 1: INTRODUCTION

1.1. Introduction

The introduction part gives readers an overview of this research. It thereby states the rationale for the study, proposes three research questions that guide the research procedure, limits the scope and finally hypothesizes the significance of the study.

1.2. Statement of the research problem and rationale for the study

Together with the changes in language learning approach from teacher-centeredness to learner-centeredness, focus has also been shifted away from finding the right teaching methodology to investigating why some learners thrive in language learning while others do not. A thick body of the good language learner studies has suggested that one of the most important factors that affect learners' performance is their learning strategies (Rubin 1975; Oxford 1990 & Nunan 1991), which means that successful learners make an effective use of learning strategy while less successful ones do not. Therefore, it is important for language learners to recognize the differences in strategy uses between successful and less successful learners so that both of them can be well aware of how to use strategies effectively.

Empirical research worldwide in both first and second language (L2) learning has generated much discussion about how language learners use strategies to acquire vocabulary and grammar as well as to master such skills as listening, speaking, reading and writing (Rubin 1975; Wenden, 1986; O'Malley, Chamot & Kupper 1989; Oxford 1990; Cohen 1998; Oxford 2001). In Vietnam, there have been some studies investigating vocabulary learning strategies of university students in Qui Nhon (Tran 2004); writing strategies employed by first year students at Hanoi National University (Duong 2005); and reading strategies by students at University of Transport and Communications (Nguyen 2006). Considering the increasing trend towards English learning in Vietnam, the current body of research is still scarce; thus, further studies need to be conducted to elaborate the issue of language learning strategy uses by Vietnamese learners.

In the context of Vietnam as a non-native environment, learners' exposure to English language is chiefly through reading materials. It is undoubtedly that reading is

among the most important skills that Vietnamese learners need to master since it can help construct a variety of vocabulary and language expressions, widening background knowledge and providing input for other language skills (Anderson 1999).

In the fast-track program (FTP) at the Faculty of English Language Teacher Education (FELTE) at the University of Languages and International Studies-Vietnam National University, Hanoi (ULIS-VNU), reading is becoming increasingly important as the language courses there are skill-integrated using a great amount of reading material as input for other skills. Nevertheless, apart from some students who are proficient readers as shown in their high score in reading tests and continuous assessments, several others find this skill challenging when they are supposed to understand academic texts. Therefore, the researcher attempted to examine students' reading comprehension strategies in dealing with academic text and find out the differences in strategy use by successful readers (SRs) and less successful readers (LSRs). Hence, the researcher decides to conduct the research titled "***A case study into reading strategies of fourth year fast-track students from FELTE, ULIS-VNU***". The findings of this research will help draw out some implications to improve readers' performance.

1.3. Research aims and research questions

This study aims at

(1) finding out the reading strategies (RSs) employed by SRs and LSRs among the fourth year fast-track students at FELTE, ULIS-VNU;

(2) investigating the differences in the employment of RSs between SRs and LSRs;

(3) informing language learners about how to use RSs effectively; and

(4) informing language teachers about the effective use of strategies so they could become an effective strategy instructors.

To achieve these aims above, this study tries to answer the following research questions:

Question 1: How do successful readers use reading comprehension strategies?

Question 2: How do less successful readers use reading comprehension strategies?

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Question 3: How does the use of reading comprehension strategies by successful readers differ from that by less successful readers?

1.4. Scope of the study

The participants of this study were fourth year fast-track students from FELTE, ULIS-VNU, who are seniors attending a four-year course training to become teachers to high school and/or college/university students. The subjects were categorized into two groups of successful readers and less successful readers according to their reading test scores throughout six semesters at the university together with self-reports and the researcher's observations.

It should essentially be noted that the primary concerns of this research are the use of reading comprehension strategies used by successful and less successful readers while reading **academic text** and the differences in the use between these two groups. Investigations into subjects' strategies in other aspects of language such as listening, speaking or writing as well as their learning styles and their teachers' instructional methods are beyond this research's concerns.

1.5. Expected outcomes and significance of the study

Since research into reading strategies has never been carried out in the context of FELTE, ULIS, VNU, this study is hoped to identify the detailed description of reading strategies used by readers of two different levels. Besides, it is also expected to provide an elaborative analysis of the differences in reading strategy uses between SRs and LSRs. The findings will then be informed to the students so as to help them make right decisions on how to use reading strategies. The findings also serve a pedagogical foundation for the teachers and teacher trainees to draw out some plans to help improve their students' reading competence.

1.6. Organization of the study

The rest of the paper includes the following parts:

Part II: Development which includes three chapters

Chapter 1 – Literature Review – provides background of the study and comprehensive review of the empirical studies related.

Chapter 2 – Methodology – describes the participants and instruments of the study, as well as the procedure implemented to do the research.

Chapter 3 – Findings and discussion – presents, analyzes and discusses the findings that the researcher discovered from the data collected from employed instruments according to three research questions.

Part III: Conclusion – summarizes the main issues discussed in the paper, the limitations of the research topic, several pedagogical implications concerning the research topic as well as some suggestions for further studies. Following this part are the References and Appendices.

PART 2: DEVELOPMENT
CHAPTER 2.1: LITERATURE REVIEW

2.1.1. Introduction

This chapter provides a brief overview of the theory and research into L2 learning strategies in general and reading strategies in particular including different definitions and taxonomies of language learning strategies and reading strategies. A justification on the basis of literature review for the learning strategies as well as reading strategy definitions and framework adopted by the researcher of this current paper are also presented.

2.1.2. Learning strategies

2.1.2.1. Different perceptions on learning strategies

For many years, language learning strategies have generated a great deal of empirical studies since Rubin and Stern first introduced the concept to L2 literature in 1975, followed by the book of Naiman et al. (1978) *The Good Language Learner*. The discussions focus on some basic issues such as the definition and classification of language learning strategies.

Rubin (1975, p.43) does not make clear distinction between general strategies and specific techniques and defines language learning strategies as 'the techniques or devices which a learner may use to acquire knowledge'. Considering its ambiguity and lack of elaboration, this definition does not gain much appreciation. Stern (1992) argues that the concept of learning strategy is dependent on the assumption that learners consciously engage in activities to achieve certain goals and learning strategies can be regarded as broadly conceived intentional directions and learning techniques. According to this definition, language learning strategies are employed either consciously or subconsciously when new information is processed and tasks are performed.

The researcher particularly favors the definition provided by Richards and Schmidt (1992) in the *Dictionary of Language Teaching and Applied Linguistics* which defines language learning strategies as 'intentional or potentially intentional behaviors carried out with the goal of learning to better help them understand, learn and remember new information'. This definition evolves from other definitions in the

way that learning strategies are considered conscious and intentional actions. Holding the same viewpoint, Cohen (1996) provides a broad definition of LLS and considers strategies as steps or actions selected by learners either to improve the learning of a L2 or the use of it or both. The strategies included 'retrieval strategies, rehearsal strategies, cover strategies and communication strategies' (p.3). This definition is generally regarded as comprehensive one among scholars in the field. However, all of these aforementioned definitions define the term 'strategy' only as the activities performed out of learners' behaviors which are observable. However, some later studies reported that learners' strategies are not always explicitly displayed.

Among the most widely accepted definition of language learning strategies, the one by O'Malley and Chamot (1990) takes its foundation from that in Richards and Schmidt (1992)'s *Dictionary of Language Teaching and Applied Linguistics* and reads that learning strategies are 'the special thoughts or behaviors that individuals use to help them comprehend, learn and/or retain new information'. In other words, learning strategies are both mental and behavioral, and individually characterized. This definition appears to be the most comprehensive one and therefore will be used as the key direction throughout this research paper.

2.1.2.2. Different classifications of L2 learning strategies

Stern (1975, cited in Naman 1978) draws up a list of 10 strategies of a good language learner which are derived from three main sources of problems faced by beginning language learners: (1) the disparity between the deep-seated presence of the first language; (2) the code-communication dilemma; and (3) the choice between rational and intuitive learning.

Table 1: Stern's list of 10 strategies of a good language learner (Stern 1975)

Planning Strategy	A personal learning style or positive learning strategy
Active Strategy	An active approach to learning tasks
Empathetic Strategy	A tolerant and outgoing approach to the target language and its speakers
Formal Strategy	Technical know-how of how to tackle a language
Experimental Strategy	A methodological but flexible approach, developing the new language into an ordered system and constantly revising it
Semantic Strategy	Constant searching for meaning
Practice Strategy	Willingness to practice
Communication Strategy	Willingness to use the language in real communication
Monitoring Strategy	Self-monitoring and critical sensitivity to language use
Internalization Strategy	Developing L2 more and more as a separate reference system and learning to think in it.

The above table describes each of the ten strategies which are considered as the foundation for several other frameworks proposed later. However, Stern himself regards this list as 'highly speculative'; therefore, it needs to be confirmed, modified or rebutted.

Naiman (1978) proposes an alternative classification scheme which contains five broad groups and several sub-groups of learning strategies. The major categorization consists of active task approach, realization of language as a means of communication and interaction, management of affective demands and monitoring of L2 performance. The following table clearly illustrates Naiman et al.'s (1978) classification of L2 learning strategies.

Table 2: Naiman's list of L2 learning strategies

Learning Strategies	Descriptions
Active task approach	Responds positively to learning opportunity or seeks and exploits learning environment
	Adds related language learning activities to regular classroom program
Realization of language as a system	Analyzes relevant problems
	Makes comparisons between L1/L2
	Make uses of the fact that language is a system
Realization of language as a means of communication and interaction	Emphasizes fluency over accuracy
	Seeks communicative situations with L2 speakers
Management of affective demands	Finds socio-cultural meanings
Monitoring L2 performance	Copes with affective demands in learning
	Constantly revises L2 system by testing inferences and asking L2 native speakers for feedback

A summary from Naiman's book 'The Good Language Learner' (1978, pp. 31-33)

In her 1981's work, Rubin identifies two kinds of learning strategies: those which contribute 'directly to learning' and those contribute 'indirectly to learning'. In the direct category, Rubin gives six types of strategies: clarification/ verification, monitoring, memorization, guessing/ inductive inferencing, deductive reasoning and practice. Creating opportunities for practice and production tricks belong to the indirect category. In production tricks, Rubin includes communication strategies, which casts controversy among scholars since learning strategies and communication strategies are considered disparate.

The two taxonomies proposed by O'Malley and Chamot (1990) and Oxford (1990) are among the two most commonly used frameworks in the good language

learner research to date. In Oxford's (1990) framework, she includes both direct and indirect learning strategies as illustrated in the following table.

Table 3: Oxford's learning strategy framework

	Strategy group	Strategy sub-group
Direct	Memory strategies	Creating mental linkage
		Applying images and sounds
		Reviewing well
		Employing action
	Cognitive strategies	Practicing
		Receiving and sending messages
		Analyzing and reasoning
		Creating structure for input and output
	Compensation strategies	Guessing intelligently
		Overcoming limitations in speaking and writing
Indirect	Metacognitive strategies	Centering your learning
		Arranging and planning
		Evaluating your learning
	Affective strategies	Lowing your anxiety
		Encouraging yourself
		Taking your emotional temperature
	Social strategies	Asking questions
		Cooperating with others
		Empathizing with others

Oxford (1990, p.17)

Oxford defines direct strategies as language learning strategies that 'directly involve the target language' and 'require mental processing of the language' (1990, p.37). The three groups of **direct strategies** (memory, cognitive, and compensation) do this processing 'differently and for different purposes': memory strategies help learners store and retrieve new information; cognitive strategies enable learners to understand and produce new language by different means; and compensation strategies allow learners to use the language despite their often large gaps in knowledge. Meanwhile, **indirect strategies** are classified into three groups: (1) metacognitive strategies which allow learners to control their own cognition; (2) affective strategies which help to regulate emotions, motivations and attitudes; and (3) social strategies helping students learn through interaction with others. All these strategies are called indirect because 'they support and manage language learning without directly involving the target language' (Oxford 1990, p.135). (See Appendix I for Oxford's comprehensive classification of L2 learning strategies)

Despite being regarded as one of the most comprehensive classification of learning strategies to date, Oxford's framework is relatively confusing when separating cognitive strategies from memory strategies. According to O'Malley and Chamot (1990), aspects of cognitive strategies relate to memory representation and to the process of acquiring complex cognitive skills. In other words, memory strategies cannot be disparate from cognitive strategies.

In O'Mally and Chamot's framework (1990), language learning strategies are divided into three main categories: (1) metacognitive strategies; (2) cognitive strategies; and (3) social/affective strategies. The following table presents the classification and the definition of each language learning strategy they proposed.

Table 4: O'Malley and Chamot L2 learning strategy framework

LEARNING STRATEGIES	DEFINITION
MA. Metacognitive	**Thinking about the learning process, planning information, monitoring the learning task and evaluating how well one has started.**
Planning	
Advance organizers	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.
Directed attention	Deciding in advance to attend in general to a learning task and to ignore the irrelevant distracters.
Functional planning	Planning for and rehearsing linguistic components necessary for an upcoming task.
Selective attention	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts and/or linguistic markers.
Self-management	Understanding the conditions that help one's learning and arranging for the presence of those conditions.
Monitoring	
Self-monitoring	Checking one's comprehension during listening or reading or checking the accuracy and/or appropriateness of one's oral or written production while it is taking place.
Evaluating	
Self-evaluation	Checking the outcomes of one's own language against a standard after it has been completed.
CB. Cognitive	**Interacting with the material to be learned, manipulating over the material mentally or physically, or applying specific techniques to a learning task.**
Resourcing	Using target language reference such as dictionaries, encyclopedias or textbooks.
Repetition	Imitating a language model, including overt practice and silent rehearsal
Grouping	Classifying words, terminology or concepts according to their attributes or meaning.
Deduction	Applying rules to understand or produce the L2 or making up rules based on language analysis.
Imagery	Using visual aids (either mental or actual) to understand or remember new information.
Auditory representation	Planning back in one's mind the sound of a word, phrase or longer language sequence.
Key word method	Remembering a new word in the L2 by (1) identifying a familiar word in the first language that sounds like the new word or otherwise resembles that new word (2) generating easily recalled images of some relationship with the first language homonym and the new word in

	the L2.
Elaboration	Relating the new information to prior knowledge, relating different parts of new information to each other or making meaningful personal associations with the new information.
Transfer	Using previous linguistic knowledge or prior skills to assist comprehension or production.
Inferencing	Using available information to guess meanings of new items, predict outcomes or fill in the missing information.
Note taking	Writing down keywords or concepts in abbreviated verbal, graphic, or numerical form while listening or reading.
Summarizing	Making a mental, oral, or written summary of new information gain through linguistic skills.
Recombination	Constructing a meaningful sentence or larger language sequence by combining known element in a new way.
Translation	Using the first language as a base for understanding and/or producing the L2.
SC. Social/Affective	**Involve interacting with other people or ideational control over affect.**
Questioning for clarification	Eliciting from a teacher or peer additional explanations, rephrasing, examples or verification.
Cooperation	Working together with one or more peers to solve a problem, pool information, check a learning task, model a language activity or get feedback on oral or written performance.

O'Malley and Chamot (1990, p.45)

According to O'Malley and Chamot (1990, p.8), **metacognitive strategies** involve 'thinking about the learning process, planning for learning, monitoring of comprehension and production while it is taking place and self-evaluation after the learning activity has been completed'. **Cognitive strategies** are more 'directly related to individual learning tasks' and 'entail direct manipulation or transformation of the learning materials'. **Social/affective strategies** involve 'either learner's interactions with other people or learner's ideational control over affect'.

While Oxford (1990) focused on categorizing heterogeneous strategies into numerous smaller sub-categories, the classification work by O'Malley and Chamot (1990) emphasized on the interaction of teacher and student and placed emphasis on scaffolding and the development of metacognitive strategies. Moreover, this framework is less cumbersome than Oxford's (1990), hence much easier for the researcher adapt to reading comprehension strategy framework. Therefore, it is reasonable to adopt this framework which is the most suitable and comprehensive one fitting well into the context of this current research paper.

2.1.3. Reading strategies

2.1.3.1. Definition of reading

Reading by far has been subjected to empirical investigation, resulting in numerous definitions yet converging into one point which considers reading as a cognitive process. Anderson (1999) deduces that 'reading is an active, fluent process which involves the reader and the reading materials in building meaning'. This definition casts some lights on the idea that reading is a cognitive process resulting in the construction of meaning of the reading text. Rumelhart (1977) defines reading as an entailment of the major three elements: the reader, the text and the interaction between the reader and the text. In this way, reading process takes into account the element of the reader him/herself whose knowledge and experience have a significant impact on the meaning construction of the text. Sharing the same viewpoint, Aebersold and Field (1997, p.15) state that:

> [i]n a general sense, reading is what happens when people look at a text and assign meaning to the written symbols in that text. The text and the reader are the two physical entities necessary for the reading process to start. It is, however, the interaction between the text and the reader that constitutes actual meaning.

In this definition, the authors take into account to purposes and attitudes as well as the readers' family and community background that determine how one reads a text or which strategies one may use to decode the text.

In general, attempts to define reading process by several researchers reach an agreement which is clearly stated in the definition by Aebersold and Field (1977). This definition confirms the reading process as a cognitive process to decode meaning that involves the text, the reader and the interaction between the text and the reader. The following section will look at different reading models so that a full understanding of the reading process can be yielded.

2.1.3.2. Different approaches to reading process

Empirical research has been done to generate different approaches towards reading process, among which prevail three approaches: the bottom-up, the top-down and the interactive model.

The **bottom-up approach** is defined as 'a decoding process of reconstructing the author's intended meaning' through the recognition of the printed letters and words and construction of meaning from the smallest textual units at the bottom (letters and

words) to larger and larger units at the top (phrases, utterances, sentences and clauses) (Rivers 1964; Plaister 1968; Yorio 1971, cited in Nguyen 2006). This approach tends to be linear as readers first perceive the graphemic information using visual ability then proceed to higher level stage in which graphemic information is transformed into phonemic representation. It is then converted into word level whose meaning pass on to the next level which is assimilated into the reader's knowledge system. Hence, the best indicator of the reader's success is their linguistic knowledge. However, this approach reveals some significant drawbacks, one of which, as pointed out by Samuel and Kamil (cited in Nguyen 2006), is:

> [t]he lack of feedback, in which no mechanism is provided to allow for processing stages which occur later in the system to influence processing which occurs earlier in the system. Because of the lack of feedback loops in the early bottom-up models, it is difficult to account for sentence-context effects and the role of prior knowledge of text topic as facilitating variables in word recognition and comprehension.

This shortcoming leads to the favor of the **top-down approach** which prevails throughout 1970's and 1980's body of research (Goodman 1971, cited in Nguyen 2006).

The **top-down approach** considers reading process as the reconstruction of meaning from a written text by using the graphonic, syntactic and semantic systems of the language to predict meaning and confirm those predictions by relating them to the reader's prior knowledge and past experiences (Stanovich 1980, cited in Nguyen 2006, p.12). In this approach, readers begin with expectations and ideas about a text based on such available clues as its title, syntactic or semantic features before moving on to look for clues that confirm or refute their expectations. In other words, this approach starts with a whole picture and deals with its parts later. Therefore, reading is 'a process of reconstructing meaning rather than decoding form and reader is an active information processor who predicts while sampling only parts of the actual text' (Carrell 1988). This approach, however, remains difficult for low-level readers whose prior knowledge and past experiences are not always helpful in certain kinds of texts, which therefore prevents them from making proper predictions. Besides, a skilled reader may spend more amount of time generating predictions than the amount they spend for recognizing the words. While two approaches towards reading process manifest certain

limitations, a more comprehensive and insightful approach has emerged and gained favor among researchers: the ***interactive approach***.

The ***interactive approach*** combines features of both bottom-up and top-down approach which translates as the process of interaction of different knowledge sources (both linguistic source and knowledge of the subject matter) to construct meaning of the text. Widdowson (1979, cited in Nguyen 2006), a proponent of this approach, views reading as the process of combining textual information with the information a reader brings to a text. In other words, reading process is not merely a matter of extracting information from the text. Rather, it is an activation of the reader' prior knowledge, resulting in the refinement or extension of this knowledge enhanced from the text. In this approach, good readers are considered as 'both good decoders and good interpreters of texts' (Eskey 1988, cited in Nguyen 2006). Eskey believes that fluency and accuracy in reading can only be achieved through the constant interaction between the two approaches. Stanovich (1980, cited in Nguyen 2006) summarizes all the strengths of the interactive approach over the other two approaches:

> [i]nteractive approach of reading appears to provide a more accurate conceptualization of reading performance than strictly top-down or bottom-up approach. When combined with an assumption of compensatory processing (that a deficit in any particular process will result in a greater reliance on their knowledge sources, regardless of their level in the processing hierarchy), interactive approach provides a better account of the existing data on the use of orthographic structure and sentence context by good and poor readers. (p. 32)

In conclusion, interactive approach is the most effective one towards the construction of meaning from a given text. In this approach, readers constantly shuttles between bottom-up and top-down processes and they cannot be successful in reading comprehension without either of these two processes. As this study focuses on reading strategies, the next part is going to summarize some outstanding studies on reading strategies that have been carried out.

2.1.3.3. Reading strategies

2.1.3.3.1. Reading strategy definition

An empirical body of research into reading strategy has generated different definitions of reading strategy. C. Brantmeier (2002, cited in Nguyen 2006) defines reading strategies as 'the comprehension processes that readers use in order to make sense of what they read'. This process may involve skimming, scanning, guessing, recognizing cognates and word families, reading for meaning, predicting, activating

general knowledge, making inferences, following references and separating main ideas from supporting ones (Barnet 1988, cited in Nguyen 2006). Apparently, some strategies may prove to be superior in different kinds of reading text and task.

O'Malley and Chamot's framework which has been mentioned in the previous section theorizes that reading strategies are characterized as 'the uses of special thoughts or behaviors to help readers to comprehend, learn and retain new information from the reading text'. These strategies are therefore both observable and unobservable and vary from individual to individual. Based on the L2 learning strategy framework proposed by the two authors, the reading strategy framework can be adapted as followed:

Table 5: Reading strategy framework adapted from O'Malley and Chamot (1990)

READING STRATEGIES	DEFINITION
Metacognitive strategies (META): Thinking about the learning process, planning information, monitoring the learning task and evaluating how well one has started.	
Planning strategies are those directed at the regulations of the course of their own thinking	
Advance organizer (AO)	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.
Directed attention (DA)	Deciding in advance to attend in general to a learning task and to ignore the irrelevant distracters.
Selective attention (SA)	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts and/or linguistic markers.
Monitoring strategies	***are deliberate actions by learners to check, monitor and evaluate their thinking and performance so verifications can be made if needed in order to perform tasks successfully.***
Self-monitoring (SMON)	Checking one's comprehension during reading while it is taking place.
Self-evaluation (SE)	Checking the outcomes of one's own language against a standard after it has been completed.
Cognitive strategies (COG): Interacting with the material to be learned, manipulating over the material mentally or physically, or applying specific techniques to a learning task.	
Resourcing (RE)	Using target language reference such as dictionaries, encyclopedias or textbooks.
Grouping (GR)	Classifying words, terminology or concepts according to their attributes or meaning.
Deduction (DE)	Applying rules to understand the text or making up rules based on language analysis
Imagery (IMG)	Using visual aids (either mental or actual) to understand or remember new information
Elaboration (EL)	Relating the new information to prior knowledge, relating different parts of new information to each other or making meaningful personal associations with the new information.
Transfer (TF)	Using previous linguistic knowledge or prior skills to assist comprehension or production.
Inferencing (IN)	Using available information to guess meanings of new items, predict outcomes or fill in the missing information.
Note taking (NT)	Writing down keywords or concepts in abbreviated verbal, graphic, or

	numerical form while listening or reading.
Summarizing (SUM)	Making a mental, oral, or written summary of new information gain through linguistic skills.
Translation (TRANS)	Using the first language as a base for understanding and/or producing the L2.

Adapted from O'Malley and Chamot (1990)

In this adapted framework, some significant changes are made to suit the current study. First of all, the group **social/affective strategy** is omitted as within the scope of this study, neither can the researcher observe how readers cooperate with their peers to achieve reading comprehension nor does she have enough space to elaborate on how readers accommodate themselves to affective changes. Besides, the two strategies functional planning and self-management in **metacognitive strategy** group are also omitted due to the researcher's hypothesis that these are more frequent in skills other than reading. Among 14 strategies in the cognitive strategy group, 4 strategies are excluded for the same aforementioned reason. Repetition and auditory representation are frequently seen in speaking and listening while recombination appears more in writing. Meanwhile, key word method is more directly applicable to learners whose first language is close to L2 as French learners to English. This newly adapted framework will be used as the theoretical framework for the whole research, especially as the coding framework for analyzing data.

2.1.3.3.2. A brief review of reading strategy research

A significant amount of research has been conducted to investigate readers' comprehension strategies in constructing meaning from a text. In these studies, the participants are quite diverse with some from elementary, secondary and university levels while others come from remedial reading classes or enroll in courses taught at non university language centers. Obviously, the participants are of different ages and backgrounds. Furthermore, the investigators use a variety of research methods and tasks to examine strategy type and frequency of strategy use including think-aloud reports, interviews, questionnaires, observations and written recalls (Bernhardt 1991 cited in Nguyen, 2006). The following table provides a comprehensive look at these studies.

Table 6: Summary of previous reading strategy studies

Researchers	**Participants**	**Methodology**	**Coding framework**	**Results**

Hosenfield (1977)	Ninth graders studying French; 20 successful readers and 20 poor readers	Think-aloud reports for each sentence they read	Main-meaning line and word solving strategies	Successful readers kept meaning of passage in mind while assigning meaning to sentence while poor readers focused on solving unknown words or phrases
Block (1986)	9 university ESLs and native English students in a remedial reading course;	Think-aloud reports for each sentence the participants read	Two different codes: General strategies and local strategies	More successful readers: + used their general knowledge + focused on the overall meaning of the text + integrated new information with old + differentiated main ideas from supporting ones The poor readers rarely employed those mentioned strategies.
Carell (1989)	75 native English speakers learning Spanish, 45 Spanish speakers in intermediate ESL course	Questionnaires of reading strategies, multiple choice reading comprehension questions	Global or top-down strategies; Local or bottom-up strategies	+ Spanish as a foreign language group at lower proficiency levels used more bottom-up strategies + ESL group at advanced levels used top-down strategies
Anderson (1991)	26 Spanish speaking adult ESLs	DTLS (Descriptive Test of Language Skills reading Comprehension Tests) with multiple choice questions; Text-book reading Profile with think-aloud reports	+Understanding main ideas +Understanding direct statements +drawing inferences Coding Scheme for TRP (supervising; supporting; paraphrasing; establishing coherence; test taking)	+Students who used more strategies comprehended better +No significant relationship between the amount of unique strategies and comprehension
Block (1992)	16 proficient readers of English, 9 non-proficient readers of English	think-aloud reports at sentence level	Two different codes: Meaning-based (global) and word level (local)	+Less proficient readers used local strategies +More proficient readers relied on global strategies

Adapted from Nguyen (2006, pp.17-18)

The findings of those studies above have revealed that there are indeed differences between successful readers and less successful readers in terms of strategy use. Generally, successful readers use top-down in combination with bottom-up reading strategies but tend to use more the former than the latter. Specifically, the subjects exhibit the following reading behavior traits:

- overview the text before reading;
- employ context clues such as titles, subheadings and diagrams;
- look for important information while reading and pay greater attention to it than other

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- attempt to relate important points in text to one another in order to understand the text as a whole;
- activate and use prior knowledge to interpret text;
- reconsider and revise hypothesis about the meaning of text based on text content
- attempt to infer information from the text;
- attempt to identify or infer the meaning of words not understood or recognized
- monitor text comprehension;
- use strategies to remember text (paraphrasing, repetition, making notes, summarizing, self-questioning etc);
- understand relationships between parts of text and recognize text structure;
- change reading strategies when comprehension is perceived not be proceeding smoothly;
- evaluate the qualities of text; and
- reflect on and process additionally after a part has been read and anticipate or plan for the use of knowledge gained from the reading.

(Hosenfield 1977; Block 1986; Carrell 1988)

These above reading strategy studies have helped to provide detailed description of the characteristics of successful readers as well as sturdy foundation for more reading strategy studies.

Despite this empirical body of research, a gap persists in those studies that little research has been done using the comprehensive framework proposed by O'Malley and Chamot (1990). Moreover, there has yet been any research investigating reading strategies employed by learners in the current research population – the teacher trainees who possibly become future reading instructors. This is the gap that the current thesis study tries to bridge by using O'Malley and Chamot's scheme to investigate the reading strategies used by the SRs and LSRs from fourth year FTP at FELTE, ULIS-VNU.

2.1.4. Summary

So far the chapter has presented the related literature that forms underpinnings for this research. Such important issues as L2 learning strategies, approaches to reading and reading strategies have been thoroughly discussed. From reviewing some main language learning framework, the researcher found out that the one by O'Malley and Chamot (1990) is the most comprehensive framework to date and also suitable to the research scope, settings and purposes. Therefore, the current study adopted the L2 learning strategy framework proposed by the two authors. The new reading strategy framework which is used as theoretical framework for this study is adapted from the two authors' learning strategy framework. The following chapter will be devoted for discussion of methodology.

CHAPTER 2.2: METHODOLOGY

2.2.1. Introduction

Since the validity and reliability of a study much rely on the choice of precise research methods, it is essential that the researcher choose the most rightful design and instruments among various other options to suit the aims and objectives of the study. In line with this notion, this chapter will present the methodological issues beginning with the choice and justification of research design, followed by description of research settings as well as participant selection process. The most important methodological issues – research instruments, data collection procedure and data analysis, are also thoroughly discussed in this chapter.

2.2.2. Research design: Multiple-case study method

Given the above research aims and research questions, this research encompassed the comparative descriptive and case study design in order to compare and contrast two groups with certain particularities, along with intensively explored the particularity, complexity and boundary of individuals in each group.

According to Yin (1994, p. 13), case study is:

> an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. It copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulation fashion, another result benefits from the prior development of theoretical propositions to guide data collection and analysis.

This definition of the case study method, which has been widely used among scholars and researchers, recognize the particularity, complexity and boundary of a single case. In fulfilling the research questions, the current study demands a thorough investigation as well as richness in data analysis so as to understand the particularity and complexity in individual cases, then to make detailed comparison among the cases. Also, as mentioned by Bell (2005), case study, as a flexible research design, 'is particularly appropriate for individual researchers because it gives an opportunity for one aspect of a problem to be studied in some depth within a limited time scale'.

Given the multiple benefits above, it is much hoped that the case study design could help answer satisfactorily the proposed research questions as well as confirm the strengths and validity of the case study method.

2.2.3. Setting of the study

2.2.3.1. Fast-track program

Describing itself as 'a special training method to reach the regional and international quality standard in tertiary education', the fast-track program of FELTE, ULIS VNU-H was first launched in the academic year 2001-2002 for students majoring in TEFL (Nguyen & Tran 2007). The basic underlying philosophy of this program is to foster learner-centeredness and learner's autonomy while encouraging life-long learning. The program takes the communicative language teaching approach to both enhance learners' English proficiency and provide pre-service teachers with an interactive English language teaching methodology. Innovative learning resources, various types of interactive activities as well as alternative forms of assessment are all incorporated into each course, all serving to achieve the program goals. Comprehensive program evaluation carried out in 2005 proved that the courses have yielded fruitful results. Referring to the detail program evaluation, Nguyen and Tran (2007) reported that:

> [f]rom 80-90% of the students in each course found the program either good or very good... 98% of all found the course met targeted objectives... From 60 to over 90% of the students in each course found them [the testing and assessment methods] either good or very good. (p.74)

As can be seen, the program has received relatively positive evaluation from majority of students involved, which marks the success of the program as well as the possible improvement in students' learning quality. Since the current research focuses on fast-track students' reading ability, the following section provides further background information on the reading courses that the participants have attended.

2.2.3.2. Reading courses

Students in fast-track program have gone through six consecutive reading courses, each lasted 15 weeks with 1 hour in-class and 2 hours self-study per week in the first four semesters and 1 hour in-class accompanied 1 hour self-study per week in the last two semesters, which makes up of total 240 hours. Students are required to reach the level of C1$^+$ in the *Common European Framework of Reference (CEFR)* [1] by the end of the program. Mid-term and end-term reading tests as well as continuous assessment such as portfolio and scrapbook are employed to assess students' reading

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[1] The **Common European Framework of Reference for Languages: Learning, Teaching, Assessment** is a guideline used to describe achievements of learners of foreign language across Europe and other countries.

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competence. IELTS reading tests are often used for mid-term exam while Cambridge ESOL exams are used for end-term tests. How portfolio assessment is used is clearly stated as follow by Nguyen and Tran (2005, p. 71):

> [t]eachers of reading course ask first and second year students to collect reading papers according to certain themes to find the new words, form new sentences with those words and summarize the content of the papers. For their second year students, they could ask them to provide a critical review and design exercises to practice a certain reading skill introduced in the semester.

Meanwhile, scrapbook making requires third-year students to give critical analysis of five reading articles, based on the given guidelines on how to read a text critically.

In evaluating the program results, it is reported that the reading score of the students ranging from 60 to 90, which is seen as fairly good compared to the score of other skills, namely listening, speaking and writing. As can be seen, reading has proved to remain a challenging skill to master among the students involved in the program. This point remarkably confirms the necessity to carry out the research into investigating reading strategies employed by fast-track students. The following section describes the process of selecting participant.

2.2.3.3. Population

The population of this study was 22 fourth year fast-track students, all aged 21, from FELTE, ULIS-VNU. They are those who have done a considerable amount of reading both through six reading courses and reading tests as well as incorporated academic reading materials in speaking and writing courses. At the time of this study, they are in the first semester of fourth year which equally translates to $C1^{+}$ level of English proficiency. Unlike those who are studying first, second or third year, fourth year fast-track students appear superior in terms of the amount of academic reading and frequency of strategy using. Simultaneously to this study, participants also conduct their own paper as partial requirement for bachelor's degree; hence, the amount of academic reading is significant enough to yield data on their reading strategies.

2.2.4. Sampling

In case study design, sampling is usually not random and the number of the sample can be very small (Hakuta 1976; as cited in Hsieh 2003, p. 96). Random sampling may undermine the results of the study as it cannot provide a useful range of subjects as well as maintain the distinguished features of the special subjects among randomly chosen ones. Since case studies investigate the particularity of individuals,

the subject is assumed to be particular in some way and this particularity has to be identified by the researcher in order to form a case (Hsieh 2003, p. 97). As this study focuses on investigating the differences in the use of reading comprehension strategies between two groups of reader, it is necessary to select participants whose characteristics can be well fitted to the given groups. Therefore, the researcher decided to use **purposive sampling method** to select participants for the study.

2.2.5. Participant selection

Described as a comparative descriptive research, this study selected participants with contrasting features and categorized them into two groups, namely successful reader group and less successful reader group. Members in both groups were those whose reading performance exposed a consistent pattern through both in-class continuous assessments and tests, especially tests as one recent noteworthy study (Yousefian & Baleghizadeh 2012, p. 76) has revealed that there is a significant correlation between the rate of strategy use and reading comprehension test performance. Therefore, it can be inferred that test score is among the best indicators of one's reading performance.

However, besides reading scores as a factor in selecting the right cases, the survey of reading strategies was also used to assure that the cases were properly chosen. The survey of reading strategies (SORS) developed by Mokhtari and Sheorey (2002) is intended to measure adolescent and adult ESL students' metacognitive awareness and perceived use of reading strategies while reading academic materials such as textbooks. Mokhtari and Sheorey (2002, p. 4) provides a brief description of the SORS as follow:

> [i]t consists of 30 items, each of which uses a 5-point Likert scale ranging from 1 (I never or almost never do this) to 5 (I always or almost always do this), under three broad categories of reading strategy: global reading strategies (13 items); problem solving strategies (8 items); and support strategies (9 items).

The items in SORS, despite being under different categories compared to the framework by O'Malley and Chamot (1990), represent the same individual strategies that each item in the framework does. Besides, this survey has been validated using large number of respondents (Mokhtari & Sheorey 2002, p.4). The researcher therefore decided to use this SORS as part of the participant selection process. (See Appendix II for the full detail of SORS).

The participant selection process started with the screening of population's reading scores throughout 6 consecutive semesters. Three students with highest average reading score and the other three with lowest one were selected to do the SORS. After calculating the SORS score, the researcher found out that the student with highest average reading score had the second highest SORS score while the student with lowest average reading score also scored lowest in SORS. The researcher therefore could make an easy choice of the less successful reader. However, when the researcher asked Student 2 if she could participate in the study, he excused not to be able to help. Hence, the Student 1 was selected as the successful reader. The following table shows the average reading score and SORS scores of six selected students.

Table 7: Six students' average reading score and SORS score

	Student 1	Student 2	Student 3	Student 4	Student 5	Student 6
Average reading score	9.8/10	9.6/10	9.2/10	7.1/10	7.4/10	7.5/10
SORS score	130/150	131/150	125/150	104/150	103/150	114/150
	Selected	Not available	Not selected	**Selected**	Not selected	Not selected

Source: Original

Student 1 (P1; labeled as successful reader) has been studying English for 13 years and began to read English stories for pleasure at the age of 9. She reported to begin reading extensively academic texts when preparing for the Entrance Exam to University, specifically at grade 12th. The Student 4 (from now on called P2; labeled as less successful reader) has 11 years studying English. The following table provides background information of the two participants:

Table 8: Participants' background information

Participants	Age	Gender	Place of birth	Ave. Reading score	GPA (current time est.)
P1	22	Female	Ha Noi	9.8	3.55 out of 4
P2	22	Female	Nam Dinh	7.1	3.10out of 4

2.2.6. Data collection instruments

2.2.6.1. Think-aloud protocol

2.2.6.1.1. Definition and classification of think-aloud protocol

Think-aloud protocol (TAP) is a method used to gather data in psychology and a range of social sciences such as reading, writing and translation research that has gained its popularity since the 80s (Ericsson & Simon 1980, p. 215). TAP yields verbal reports which refer to a set of data that subjects verbalize while performing a cognitive or linguistic task (Cohen & Hosenfeld 1981).

Different classifications of verbal reports exist indicating their methodological significance, among which prevails the Ericsson and Simon's (1984, 1993) classic model. Ericsson and Simon propose 'a typology to categorize verbal reports based on both temporal frame [time frame] in which they are collected and on the level of detail or reporting'. Verbal reports thereby are either **concurrent reports** or **retrospective reports**. Concurrent reports are those collected as subjects verbalize while performing the task while retrospective reports are those collected when subjects verbalize some time after performing the task. Besides, Ericsson and Simon also differentiate between reports requiring subjects to verbalize only their thoughts (Type 1 or non-metacognitive protocols) and those requiring subjects to verbalize additional information such as explanations (Type 2) or justifications (Type 3) which are both considered to be metacognitive protocols. The upcoming sections further discuss the use of TAP in L2 research as well as the threats to the validity of these TAP types.

2.2.6.1.2. The use of TAP in L2 reading research

Prior to the emergence of TAP in L2 research during 1980s, investigators were often impelled by the difficulties of relying wholly on external observation in studying mental processes of language acquisition. Selinker (1972, cited in Bowles 2010) indicates that researchers should focus analytical attention only on observable data to formulate theories and conduct research about L2 acquisition. However, external observation, which yields mainly production data, alone is not capable of providing insights on a variety of issues such as language learners' cognitive processing, thought processes, and strategies (Bowles 2010, p. 1). Corder (1973, cited in 2010) agrees with this view, stating that production data provide only a small piece of the language learning puzzle as many underlying processes are not directly observable. It is risky for researchers to simply infer what learners are thinking based on their production data as how learners process and produce language may be missed. Verbal reports therefore enable researchers to gain access to cognitive processes unavailable by other means.

Verbal reports have been used extensively to gain insights into learners' cognitive processes and strategies while reading in their L2 (Carrell 1989; Cohen 1986; Pressley & Afflerbach 1995). Some studies focus on both the use of mental

translation as a strategy in L2 reading (Kern 1994 cited in Bowles 2010) and L2 readers' inferencing abilities (Laing & Kamhi 2002). The method has also been extended to compare and contrast first and second language reading strategies as well as to examine the role of first language in second language reading comprehension (Chamot 1999; Seng & Hashim 2002; Yamashita 2002 cited in Bowles 2010). Recently, verbal reports have been used to investigate the reading strategies non0native English-speaking students use when taking standardized test such as the test of English as a foreign language (TOEFL) (Cohen & Upton 2007). Together with the increasingly thick body of the good language learner research, many researchers attempted to use TAP as a means to investigate the differences between good English readers and poor English readers (Tsai 2009; Nguyen 2006; Rong n.d.). Considering its usefulness and methodological significance to reading research, the research of this study decided to use TAP as **the main data collection instrument** to provide answers to three proposed research questions. In reinforcing the validity of research results, the subject's document was also taken as a supplementary instrument in collecting data.

2.2.6.1.3. Challenges associated with using TAP

Despite the frequency with which verbal reports have been used as a methodological tool to gain insights into L2 learners' cognitive process, their validity has long time been doubted. A number of potential threats to the validity of both concurrent and retrospective reports have long been aware by several researchers (Ericsson & Simon 1993; Bowles 2010). Bowles indicates that for **retrospective reports**, threats to their validity include 'a potential for veridicality [trying to make the reports similar to the original] since participants verbalize some time after completing a task'. In other words, retrospective reports sometime may not 'accurately reflect participants' thought processes because they simply may not recall what they were thinking as they completed the given task', resulting in the incompleteness of the reports. Meanwhile, the validity of **concurrent reports** is questioned as 'it is unknown whether the act of verbalizing while completing a task is reactive, acting as an additional task and altering cognitive processes ... [instead of] providing a true reflection of thoughts' (Ellis 2001; Jourdenais 2001 cited in Bowles 2010, p. 14).. Some researchers argue that verbalization of thoughts during language tasks imposes

an additional processing load on the subjects, and is therefore not a pure measure of their thoughts (Jourdenais 2001 cited in Bowles 2010, p. 15).

Fortunately, these threats can be minimized with certain precautions. For retrospective reports, if there is only a short delay of about 3 to 5 minutes between task performance and verbalization, the participants will be likely to provide data closest to their actual cognitive process. Besides, if participants are provided with some stimulus such as a video or audiotape of their performance, the possibility of veridicality is also lessened (Bowles 2010, p. 14). For concurrent reports, a handful of studies to date indicate that non-metacognitive protocols (Type 1 concurrent reports) are found to be non-reactive while metacognitive protocols (Type 2 and 3 concurrent reports) have high possibility of reactivity. These conclusions are made after Bowles (2010, pp. 15-64) reviewed 10 studies using non-metacognitive protocols and 30 studies using metacognitive protocols. Hence, using non-metacognitive protocols will possibly enhance the validity of verbal reports.

The researcher therefore decided to use both retrospective reports and non-metacognitive reports in which no further explanation or justifications are required for the participants while they are performing the tasks.

2.2.6.2. Reading comprehension tests

Carroll (1968) defines a test as "a procedure designed to elicit certain behavior from which one can make inferences about certain characteristics of an individual". In L2 research, tests are generally used to collect data about learners' ability and knowledge of the L2 aspects such as vocabulary, listening, reading etc. In this study, two IELTS reading tests (from IELTS past papers) were accompanied with TAP procedures for eliciting verbal data from participants, each of which was used for one TAP procedure. The participants were asked to verbalize every thought in their mind while trying to comprehend the text and come up with the answers to reading comprehension questions. IELTS reading tests were chosen due to their confirmed validity and reliability as a standardized test to check test takers' reading ability. The following table provides description of the two chosen tests.

Table 9: Description of the two IELTS reading tests

Criteria	Reading test 1 in TAP 1	Reading test 2 in TAP 2
Title	*The Meaning and Power of Smell*	*The Nature of Genius*

Words	727 (3,716 characters; 5.1 characters per word)	985 (5,081 characters; 5.2 characters per word)
Sentences	34 (21.4 words per sentence)	28 (35.2 words per sentence)
Paragraphs	6 (5.7 sentences per paragraph)	7 (4 sentences per paragraph)
Question types	Task 1: Summarizing questions (Choose six headings from list) Task 2: Understanding detail and author's purposes, making inferences (Four multiple choices) Task 3: Understanding detail (Four gap fill questions)	Task 1: Reading for details (Choose five right statements out of 11 according to the text) Task 2: Reading for details (Judge if eight given statements are True/False/Not Given)
Scoring	out of fourteen	out of thirteen

From the table above, it can be seen that the two chosen texts reach a certain level of compatibility with which there might be insignificant differences in terms of participants' performance throughout two TAP procedures. The question types are also various to check participants' ability to comprehension of both overall text and local details (See Appendix III for the two tests).

2.2.6.3. Document

In qualitative research, documents help researcher to get the necessary background of the situation and insights into the dynamics of everyday functions which is unavailable in the current time of research (Donna 2005, p. 398). This research studied two cases in-depth, manifesting the necessity of using qualitative research instruments. Therefore, reading portfolios and scrapbooks that the two participants of this study have made during their reading courses were subjected to further inquiry. These two types of assessment were made compulsory for every student in the fast-track reading courses, aiming at helping students building reading skills and practicing reading strategies while widening their background knowledge and vocabulary in various themes (Description of these two types of documents has been provided in the reading course section). However, the researcher decided to use only portfolios that the participants made in their second year and scrapbook in their third year since the information from these recent documents can more accurately reflect their current stage of cognitive level. Data obtained from these past documents would help the researcher further understand the subjects' development in terms of reading strategy use.

2.2.7. Data collection procedure

The following diagram illustrates each of the TAP administering procedure:

STEP 1
Each participant went through a training procedure lasted 15 minutes

STEP 2
The participant did the IELTS Reading test 1; concurrent reports were elicited. The procedure was recorded and videotaped. The researcher gave occasional probes to the participant when she was silent.

STEP 3
After 3 minutes since the task completion, the participant gave retrospective reports while watching the videotape. Occasional probes were given by the researcher

Figure 1: TAP administering procedure (Adapted from Ericsson and Simon 1993)

It should be noted that each participant involved in separate TAP collection procedure. First of all, each participant was given a 15 minute training session to familiarize with the think-aloud task. In this training session, the participant practiced saying out loud everything that she often said to herself silently. Small tasks such as multiplications, solving an anagram and counting the shoes/ sandals she possessed were given to help them begin talking aloud (See Appendix IV for the complete warm-up procedure). Right after that, the researcher began to elicit concurrent verbal reports from participant by giving a general instruction that:

> [t]his experiment is designed to investigate how second-language learners process texts they read in their second language. For this reason, I would like to know what you are thinking as you read the following text...I would like you to TALK ALOUD as you go through the text. What I mean by "talk aloud" is that I want you to say out loud everything that you would say to yourself silently when you think. Just act as if you were alone in the room speaking to yourself. Don't try to explain your thought... You can verbalize in either English or Vietnamese. (Bowles 2008)

The researcher aimed at eliciting type 1 concurrent reports; therefore, she demanded the participant not explain thoughts. Moreover, when the participant stayed silent, such probes as "*Keep talking*", "*What are you thinking?*", and "*What's on your mind now?*" were given to encourage the participant to keep talking.

After three minutes since the participant completed the task, the researcher began to elicit retrospective reports by letting the participant watch the videotaped. Such probes as "*What were you doing then?*" and "*What were you thinking when you did this?*" were given to reconstruct the cognitive process of the participant.

The above procedures were replicated twice for each participant as the participants might not have been familiarized themselves completely with the TAP procedure in just a few minutes of training. Moreover, the researcher believed that this

way would enhance the completeness and richness of data and the validity of any conclusions.

With regards to participants' documents, the researcher contacted them via email to ask them for their portfolios and scrapbooks. Their willingness to provide complete collection of their documents which were saved in all Microsoft Document format helped ensure the completeness of data and ease the cumbersome process of data tracking and coding.

2.2.8. Data analysis method

Qualitative data analysis strategies were used to address this study's research questions. Apart from most quantitative studies, data analysis in qualitative studies is an ongoing process (Mertens 2005, p. 420). Analysis in qualitative studies is recursive in which findings are generated and systematically built as successive pieces of data are gathered (Bogdan & Biklen 2003; Patten 2002; Wolcott 2001 cited in Mertens 2005, p.420). According to Yin (2011), the analysis of qualitative data usually consists of five phases. The first analytic phase, *compiling* data into a formal database, calls for the careful and methodic organizing of the original data. The second phase, *disassembling* the data in the database, involves a formal coding procedure. The third phase, *reassembling*, is less mechanical and benefits from a researcher's insightfulness in seeing emerging patterns. Creating data arrays can help to reveal such patterns in this third phase. The fourth phase, *interpreting*, involves using the reassembled material to create a narrative, with accompanying tables and graphics that will become the key analytic portion. The final phase *concluding* calls for drawing the conclusions from the entire study. It is noticeable that the five phases do not fall into a *linear* but a *recursive* relationship (Yin 2011, p. 179). This relationship is depicted as follows, with arrows showing the sequencing among five phases and two-way arrows implying the going back and forth between two phases.
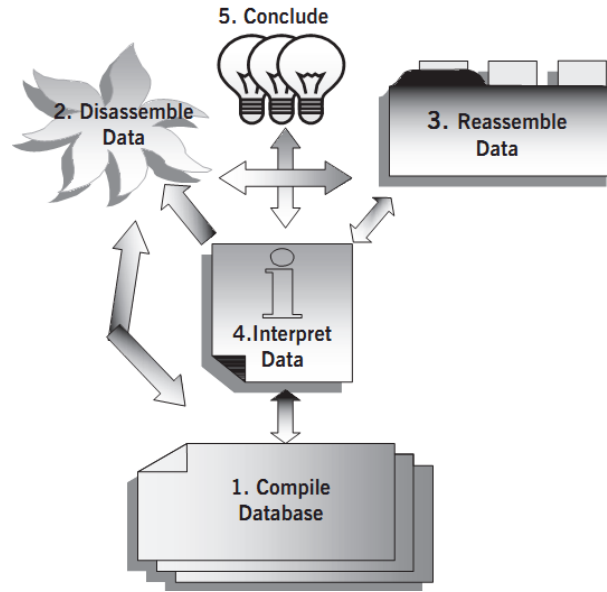
Figure 2: Data analysis procedure (Mertens 2005, p. 421)

As having been mentioned earlier, the reading strategy framework proposed by O'Malley and Chamot is considered to be the most comprehensive one and chosen as the conceptual framework for this study as well as the data analysis framework. Therefore, the data collected from different think-aloud protocol sessions and the subjects' documents were coded and classified into different reading strategy items. Below was the illustration of how the data were categorized in this study. For the complete data coding categories and examples, see Appendix V.

Table 10: Sample coding categories

Verbal data/ Participants' documents	Coding categories
I preview the headings and illustrations to get the main idea of the text before reading.	Metacognitive strategy (Advance organizers: **AO**)
I want to use dictionary to check for the meaning of this word. I think that word is the key to answer this question.	Combining Cognitive strategy (Resourcing **R**) and Metacognitive strategy (Selective attention **SA**)

Besides, it is necessary to have a citing format of data source to follow more easily as the data collected through two instruments were of great details. Hence, the study follows the format of source citing **participant – source of data**.

Table 11: Source citing format

Data source Participant	Recording 1	Recording 2	Video 1	Video 2	Article in portfolio and scrapbook
P1	TAP 1	TAP 2	VID 1	VID 2	ATC (from 1 to 24)
P2	TAP 1	TAP 2	VID 1	VID 2	ATC (from 1 to 24)

For example, P1.TAP1 22:06 refers to what the participant 1 verbalized at the second 22:06 in the first TAP procedure.

2.2.9. Conclusion

This chapter presents and discusses the research design and provides rationale for the choice of methods, data collection and analysis strategies and procedures for the current study. After reviewing the literature as well as adhering to the research questions, the researcher believes that the case study method and qualitative data analysis approach are significantly appropriate to help finding answers to the research problem as well as gaining insights to the phenomenon. Think-aloud protocol and documents were the data collection instruments with the former being the major instrument. As this data collection method is quite new among Vietnamese researchers, comprehensive and systematic analysis of think-aloud protocols as a data collection method was thoroughly given. Lastly, detail description of data coding procedure was provided, using the reading strategies framework adapted from O'Malley and Chamot's (1990) L2 learning framework as coding categories. The data source citing format was also provided for readers to follow more easily. The next Chapter will describe the results obtained from the data collection and analysis procedures as well as open some in-depth discussions regarding the results of this study in relation to prior related studies.

CHAPTER 2.3: FINDINGS AND DISCUSSION

In this chapter, answers to the proposed research questions were presented based on the analysis and triangulation of data from both TAP and the study of subjects' documents. The analysis framework adapted from O'Malley and Chamot's reading strategy framework has been a significant tool in analyzing data obtained from different instruments. It should also be noticed that the chapter does not simply end with the sheer analysis of data or the literal presentation of empirical findings, but goes two further steps – interpreting the findings, comparing them to other related studies and finally drawing some overall conclusions from the data in its entirety.

2.3.1. Research question 1: How do successful readers use reading comprehension strategies?

2.3.1.1. Metacognitive strategy use

Table 12: Metacognitive reading strategies

Reading strategies	Definition
Metacognitive strategies (META): Thinking about the learning process, planning information, monitoring the learning task and evaluating how well one has started.	
Planning strategies are those directed at the regulations of the course of their own thinking	
Advance organizer (AO)	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.
Directed attention (DA)	Deciding in advance to attend in general to a learning task and to ignore the irrelevant distracters.
Selective attention (SA)	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts and/or linguistic markers.
Monitoring strategies	*are deliberate actions by learners to check, monitor and evaluate their thinking and performance so verifications can be made if needed in order to perform tasks successfully.*
Self-monitoring (SMON)	Checking one's comprehension during reading while it is taking place.
Self-evaluation (SE)	Checking the outcomes of one's own language against a standard after it has been completed.

(Adapted from O'Malley and Chamot)

Table 13: P1's metacognitive strategies use frequency

META Strategy	AO	DA	SA	SM	SE	Total
TAP 1 (f=	2	7	11	23	14	57
TAP 2 (f=	3	8	14	31	13	69
24 articles (f=	35	48	57	N/A	7	~147

The above table provides statistics on META strategies use frequency by P1 during two TAP procedures and in her processing 24 articles. As can be seen from this table, P1 used almost every META strategy listed in the framework with **self-monitoring** replicated 23 times out of 57 times in TAP1; 31 times out of 69 times in

TAP1 and no evidence in 24 reading articles. **Planning strategies** were replicated 20, 25 and 35 times in TAP1, TAP2 and 24 articles respectively.

In terms of META, two sub-groups of planning and monitoring were under investigation. P1 manifested herself **a constant active planner** with **frequent self-monitoring**. These strategies were repetitive throughout both her performance in the reading test during two TAP sessions and her making of reading portfolios and.

Data from TAP1 and TAP2 revealed P1 **an active planner**. In processing two reading texts, P1 always began by looking through the text, flipping over the paper while moving her eye back and forth, and then fixing her eye for 5 seconds at the headline, verbalizing that she was "*trying to figure out what the title was telling*" (P1.VID1 01:23-01:30 & P1.VID2 03:45-04:01). In retrospective recalls, as stimulated by the videotape, she explained that she would not try to "*read the reading comprehension questions first, but the whole passage with a clear structure and purpose in mind*". "*This is the way I often do when it comes to a long reading passage,*" she added (P1.TAP1 44:31-44:49 & P1.TAP2 55:20-55:31). She also confirmed that she "*paid attention to only some items which were needed to answer to the comprehension questions*", which indicates a trace of using SA strategy (P1.TAP1 45:04-45:20 & P1.TAP2 55:56-56:30).

Data from documents also helped showing P1 **an active planner** as she continuously reported to "*briefly skim through a lot of articles to come up with the right and appropriate ones, by looking at the headlines and sub-headlines*" while choosing the text to include in the portfolio (P1.ATC1-24). This reflection revealed that the subject had decided in advance which type of text to approach. Furthermore, she decided to attend only to the title and sub-title of the text instead of reading the whole text (P1.ATC 1-24). After reviewing all the outline and summary of 24 articles written by the subject, the researcher found out that in processing all those 24 articles, the subject carried out the procedure with an integrity of strategy use: she started out by organizing the text, following the sub-headlines and/or the beginning sentences of each paragraph, as inferred from her written summary (P1.ATC1-24). Interestingly, she also selected specific units of the text, such as the cause-effect relationship between

events in news story, to attend to while ignoring such distracters as long lists of figures and numbers (P1. ATC3, 5, 7, 10).

The subject also **frequently** and **consciously** used **self-monitoring strategies** in aiding text comprehension by keeping herself watching out for any difficulties to successfully employ other fix-up strategies. Concurrent verbal reports demonstrated the constant and flexibility in the use of this strategy. The following excerpts from verbal transcription validated this claim.

> 25:30 olfaction, olfaction
> 25:31 olfaction.
> 25:32 I don't know this word
> 25:33 but I saw the word smell
> 25:34 in the next sentence
> 25:35 so I think they are
> 25:36 similar (nodding her head)
>
> (P1.TAP1 25:30-25:36)
>
> 00:12 begetter, begetter
> 00:13 begetter.
> 00:14 the text has so many
> 00:15 new words. I think I
> 00:16 should look at the text all over again
>
> (P1.TAP2 00:12-00:16)
>
> 12:39 I'm trying to find the connection
> 12:39 between paragraphs. Sometimes I stop
> 12:40 at the last sentence of one paragraph
> 12:41 and try to find out the connection between
> 12:42 this sentence and the next paragraph.
>
> (P1. TAP2 12:39-12:42)

The reader found it difficult to understand a word and immediately looked out for clues to understand it, and confirmed it with some signs of agreement (P1.VID1 25:30-25:36). Besides, whenever there were any obstacles that hindered her from achieving the objectives, she altered the way she read and ended up using a different strategy which she believed to be more helpful. This particular use of **self-monitoring strategy** was found to be used **every time** she encountered a new word, which indicated a high frequency in strategy use (P1.TAP1 & P1.TAP2).

Meanwhile, in comprehending an article included in the portfolio, P1 reflected that:

> [a]lthough it was a very informative article with a lot of interesting facts, I still felt very uncomfortable while reading it… So I chose just to list out some main points/facts that I thought was the most important and covered the contents of the other parts…I tried to read it for several times (maximum 3 times) to make sure that I had fully understood it. Then I tried to figure out the frame structure of the article to make the outline." (P1.ATC 6)

It is quite clear that the subject was fully aware of the problems she encountered while trying to understand the text and compensated for that by employing other fix-up strategies such as re-reading.

2.3.1.2. Cognitive strategy use

Table 14: Cognitive reading strategies

Reading strategies	Definition
Cognitive strategies (COG): Interacting with the material to be learned, manipulating over the material mentally or physically, or applying specific techniques to a learning task.	
Resourcing (RE)	Using target language reference such as dictionaries, encyclopedias or textbooks.
Grouping (GR)	Classifying words, terminology or concepts according to their attributes or meaning.
Deduction (DE)	Applying rules to understand the text or making up rules based on language analysis
Imagery (IMG)	Using visual aids (either mental or actual) to understand or remember new information
Elaboration (EL)	Relating the new information to prior knowledge, relating different parts of new information to each other or making meaningful personal associations with the new information.
Transfer (TF)	Using previous linguistic knowledge or prior skills to assist comprehension or production.
Inferencing (IN)	Using available information to guess meanings of new items, predict outcomes or fill in the missing information.
Note taking (NT)	Writing down keywords or concepts in abbreviated verbal, graphic, or numerical form while listening or reading.
Summarizing (SUM)	Making a mental, oral, or written summary of new information gain through linguistic skills.
Translation (TRANS)	Using the first language as a base for understanding and/or producing the L2.

(Adapted from O'Malley and Chamot 1990)

Overall, the reader used almost every of the ten cognitive strategies listed in the framework with different frequency, as indicated in the following table.

Table 13: P1's cognitive strategy use frequency

COG Strategy	RE	GR	DE	IMG	EL	TF	IN	NT	SUM	TRANS	Total
TAP 1(f=	1	1	1	7	10	16	36	2	5	12	91
TAP 2(f=	3	2	3	8	14	17	40	4	6	16	113
24 articles (f=	34	47	40	N/A	112	89	156	109	24	N/A	~611
Total times used	38	50	44	~15	136	122	132	115	35	~28	~815

As can be seen from the table, there were 4 prominent strategies which were utilized with highest frequency among the rest, namely **inferencing**, **transfer**, **translation** and **elaboration** with which frequency uses were 36, 16, 12 and 10 times out of 91 times in TAP1 and 40, 17, 16 and 14 times out of 113 times in TAP2. Surprisingly, **note-taking** strategy was seen prevailing in all of her scrapbook but almost absent during subject's verbalization sessions. Moreover, the subject

occasionally reported to **mentally summarize** each paragraph (P1.TAP1 12:37-12:59; P1.TAP 14:56-15:12; P1.TAP2 34:04-34:20). **Imagery** was used in combination with **elaboration**, which, according to subject's report, was "*extremely helpful in retaining new information*" (P1.TAP2 27:56-28:05).

With regards to **inferencing strategy**, the researcher found out that the subject tended to use it consistently during verbalizing sessions with particular purposes. In closely examining the transcribed verbalizations, the researcher concluded that there were three main types of inferences that the subject had made while processing the text, which were **predictive inference**, **associative inference** and **explanatory inference**. As the name suggested, *predictive inferences* are speculations about events or actions that may occur based on what was written in the text; *associative inferences* are specifications of procedures or responses to *wh*-questions while *explanatory inferences* provide causal connections between ideas in the text (Laign & Kamhi 2002, p. 437). The following table indicates the frequent use and provides example of each type.

Table 16: Different types of inferences and their use frequency

Predictive		Associate		Explanatory	
Example	Frequency	Example	Frequency	Example	Frequency
TAP1 00:12-00:16 "*I guess the text would tell about the meaning of different smells, for example some smell sexy, other is flirtatious*"	6 times out of 76 times making inferences	TAP1 00:18-00:25 "*The meaning and power of smell, so I guess it's about how powerful smell is and its usefulness*"	20 times out of 76 times making inferences	TAP1: 03:05-03:12 "*Well, why did the text say this? 'Why not until it was impaired do we realize how important it is'. Ah, oh, that's right, when I think about my nose got stuck. That's true*"	10 out of 76 times making inferences

Associative inferencing was most frequently used among three types with the frequency of 20 out of 78 inferences made during two TAP sessions, in which the researcher assumed that the reader believed an inferred claim would be more valid if she stuck closely to the text.

The most important discovery of this study which had been left untouched in the empirical research was that the successful reader tended to consciously take a series of different cognitive strategies to decode a meaningful unit of the text. The series was carried out frequently, quickly and almost automatically (P1.TAP1 10:13-

35:00; P1.TAP2 05:20-42:57). A prominent combination was **transfer – translation – elaboration – inferencing**. The following excerpt illustrated this claim.

39:06   I am looking at the statement
39:07   "a truly gifted (**stress**) people are talent in one … defective (**stress**)
39:08   in other areas"
39:09   I am not sure about the word defective
39:10   but I think it might be opposite (**TF**-transfer prior linguistic knowledge, she knew the word effective)
39:11   to effective. (**mumble**)"một người giỏi ở lĩnh vực này
39:12   thì yếu ở lĩnh vực khác" (**TF & TRANS**)
39:13   I think so, because I have read
39:14   about many geniuses. They are
39:15   good at music but really bad with math (**ELAB**)
39:16   Well, the statement A which said
39:17   geniuses are talented in all areas
39:18   is definitely wrong (**IN** - **Associative**)

(P1.TAP2 39:06-39:18)

This combination appeared almost all the time when the subject had to provide answers to a reading comprehension questions. Sometimes translation strategy was absent from the chain while two consecutive inferencings took place.

Imagery and **elaboration** strategy also frequently coupled which, according to the reader, proved to be "*extremely helpful in retaining new information*" (P1.TAP1 23:31-23:36). In think-aloud session 1 where she read about an experiment with smell, she imagined her "*high school girl friend that liked a boy very much and could recognize her boyfriend's clothes among others'*" (P1.TAP1 37:40-37:58). This linking to prior experience with smell helped her understand the experiment result. At the same time, the word "*marvel*" which appeared in the second think-aloud session seemed to be a new word to her, yet she managed to guess this word and remember it by relating it to the name of the famous comic brand (*Marvel*) (P1.TAP2 46:06-46:08). These examples were among several others which proved the active combination of the two strategies.

Another appealing finding of this research was that the reader constantly engaged in **self-questioning**, which had been excluded from most reading strategy framework to date. This strategy is utmost important since it reflects the active interaction between the text and the reader, demonstrating the reader's critical thinking ability. P1 constantly verbalized during her completion of the reading tasks, such as "*Why is that possible?*" "*Why did the author say this?*" "*What does this word mean?*" or "*Why did the writer have to use such a difficult word like this?*" (P1.TAP1 22:02-

48

22:03; P1.TAP1 46:06-46:08; P1.TAP2 34:45-34:50). Looking at the marginal notes the reader had made in her five scrapbooks, the research found innumerous questions written next to the text, wondering about its structure, the author's message, word choice and implications (P1.ATC 19-24). The researcher categorized this strategy into the cognitive strategy group as it reflected the characteristics of this group – interacting with the reading text, manipulating over the text mentally or physically or applying specific techniques to a reading task.

2.3.1.3. Interactive relationship between cognitive and metacognitive strategies

The previous section discussed the interaction of strategies within one group strategies. Further investigation into the transcribed verbalizations revealed that there were active interactions between metacognitive and cognitive strategies. More elaborately, one metacognitive strategy was accompanied and complemented by another cognitive strategy. In other words, the reader needed to be meta-cognitive to use cognitive strategies such as inferencing, elaboration and transfer. The following table presented the relationships of metacognitive and cognitive strategies to reading comprehension achievement, with supportive examples.

Table 17: Cognitive-metacognitive strategy interactive relationship

Relationship	Description	Example
(1) Selective attention (META) – Translation (COG)	Reading a specific text unit by translating it to Vietnamese.	P1.TAP2 34:00 – 34:40 *I will read the 2nd paragraph again. … [Translate] chúng ta ghen tị (envy), không tin tưởng (mistrust) … Does that sound OK?*
(2) Monitoring (META) – Translation (COG)	Translating as reading and judged if it made sense and understandable	P1.TAP1 32:31-33:50 *Acute có phải là acurate không? Nghĩa là chính xác. Interior… Interior có phải nghĩa là phía trong đúng không?*
(3) Planning – Monitoring (META) – Summarizing (COG)	Reading the whole passage and at the same time noticing whether it was understandable by summarizing or re-reading the difficult parts.	P1.TAP2 10:03 – 11:38 *I think I should read the whole text again because it was too difficult with an awful lot of new words. After my 2nd time reading this first para, I think it's about genius.*
(4) Directed attention – Selective attention (META) – Elaboration (COG)	Reading the comprehension questions to see what was asked and trying to eliminate distracters by referring back and forth the text the text and connecting information to make sense of the choice.	TAP2 32:35-33:00 *I am reading the questions… They want me to identify the popular beliefs. Popular beliefs are in the 2nd paragraph. I am reading it again.*

This table also demonstrated the idea that some cognitive strategies might perform the function of metacognitive ones. For example, in the relationship number 1

indicated in the above table, translation was also considered to be metacognitive because the aim of using this strategy was to make an evaluative judgment as to whether the text made sense. The researcher arrived at the conclusion that the goals of using a strategy determined whether a strategy used is cognitive and metacognitive. If the reader read a text to gain understanding, the reader may probably use cognitive strategy. However, if the reader read the text with a purpose to see if it has been well understood, the reader may be using metacognitive one. There was often an unclear distinction between cognitive and metacognitive strategy in such cases (Phakiti 2003, p. 44).

2.3.2. Research question 2: How do less successful readers use reading comprehension strategies?

2.3.2.1. Metacognitive strategy use

Table 18: P2's metacognitive strategy use frequency

META Strategy	AO	DA	SA	SM	SE	Total
TAP 1 (f=	1	1	5	6	5	18
TAP 2 (f=	1	2	7	9	5	24
24 articles	12	18	28	N/A	6	~64

As can be seen from the above table, P2 used almost every metacognitive strategy listed in the framework. **Self-monitoring**, **selective attention** and **self-evaluation** stood out as the three most frequently used strategies during two TAP sessions. However, this group strategy was not much evident in her reading portfolios as well as her scrapbooks, as can be seen from the relatively small number of strategies in processing each article (about 2.7 strategies per article). In two TAP sessions, P2 both began with looking at the title of the text, verbalizing that she was "*looking at it and going to translate it to see whether the rest of the passage is about*" (P2.TAP1 00:30-00:38; P2.VID1 00:28-00:36). Right after that, she flipped the paper to the list of comprehension questions and was about to read them, instead of skimming the text first (P2.VID1 00:39-00:42). However, she reported concurrently that the comprehension questions sounded "*so weird and difficult*" that she decided to "*turn to the main page and started reading from the beginning to end*" (P2.TAP1 01:13-01:30). Notably, she read each sentence by sentence, with loud voice and normal speed, if not a bit slow, with occasional self-questioning such as "*What does olfaction mean?*", "*What does scent mean*?" etc (P2.TAP1 03:30-03:39). As she read from the beginning

to the end, word by word and sometimes stopped at a sentence for quite long compared to other sentences, the whole process took about 12 minutes (P2.TAP1 00:30-12:38).

What the researcher inferred from the above process was that the reader did **show herself as an advanced organizer with self-monitoring**. Obviously, she had planned in advance how she was going to process the text. However, later in her retrospective reports, she told that she "*realized that it was not going to work with this type of text*" so she "*forced myself* [myself] *to change her strategy*", which gave a sign of **self-monitoring** (P2.TAP2 56:45-56:57). Another inference made from this analysis was that she was not acquainted herself enough with this change, resulting in longer time to process the text (P1.TAP1 00:30-51:30; P2.TAP1 00:25-58:46). Despite realizing that it took her longer time to process the text than usual, she still kept on doing this way throughout both TAP sessions, which shows that the reader **did not make a flexible use of metacognitive strategy**.

The frequency of using metacognitive strategy was also not very considerable. The subject mostly used it at the **beginning** of the process and **seldom repeated it** while constructing meaning (P2.TAP1 & P2.TAP2).

2.3.2.2. Cognitive strategy use

Table 19: P2's cognitive strategy use frequency

COG Strategy	RE	GR	DE	IMG	EL	TF	IN	NT	SUM	TRANS	Total
TAP 1(f=	0	0	1	1	4	7	20	6	3	7	49
TAP 2(f=	2	1	1	1	5	12	31	4	1	8	76
24 articles (f=	30	20	28	N/A	60	59	102	89	13	N/A	~401

As from the above table, P2 showed a significant use of **inferencing**, **transferring** and **translation** strategy while completing the reading tasks in two TAP sessions with 20, 7, 7 times using respectively. **Elaborating** and **summary** strategy received just a moderate amount of use, at 4 and 3 times respectively. A significant finding was that the subject seldom used **resourcing**, **grouping**, **deduction** and imagery **strategy**. The same pattern was seen in the use of cognitive strategies by P2 while processing 24 articles included in her scrapbooks and portfolios.

With regards to **inferencing strategy**, the reader made some **associative inferences**, as could be seen 2 TAP sessions and in 24 articles. One excerpt from the transcribed verbalizations was another evidence of the above claim.

36:52 (Re-read the text) "*smell, however*
36:53 *is a highly elusive* (with stress)
36:54 *phenomenon"*. What does
36:55 elusive mean?
36:56 (Go on with reading) *odours cannot*
36:57 be named. Probably elusive and cannot
36:58 have something in relation (**Assosiative IN**).

<div align="right">(P2.TAP1 36:52-36.58)</div>

The following example, which included a part of the text from a novel by Emily Bronte - *"Wuthering Heights"*, along with her marginal notes, clearly illustrated how she made an associative inference.

> 'May she wake in torment!' he cried, with frightful vehemence, stamping his foot, and groaning in a sudden paroxysm of ungovernable passion.
> **Subject's comment**: Lexical choices are effective. Every single word contains the author's intention of emphasizing Heathcliff''s sorrow (**Associative IN**). Such words as "vehemence", "groaning", "sudden paroxysm", "ungovernable passion" successfully identify the high level of his misery (**Associative IN**).
> 'Why, she's a liar to the end! Where is she? Not THERE - not in heaven - not perished - where? Oh! you said you cared nothing for my sufferings! And I pray one prayer - I repeat it till my tongue stiffens - Catherine Earnshaw, may you not rest as long as I am living; you said I killed you - haunt me, then!
> **Subject's comment**: The author uses this strong word creatively. Everyone fears being haunted, but Heathcliff wants. He wants to have Catherine beside always (**Associative IN**).
> "The murdered DO haunt their murderers, I believe."
> **Subject's comments**: Metaphor is used here. "the murdered" stands for Catherine and "the murder" symbolizes Heathcliff (**Associative IN**).

<div align="right">(P2.ATC 21)</div>

It is also interesting to note that the amount of **predictive and explanatory inference was insignificant** compared to associative reference. In TAP 1, almost no explanatory inference was made; meanwhile, in TAP 2 there was once or twice the reader made a predictive inference. This finding made a strong link to a moderate amount of elaboration strategy use. Since a predictive and an explanatory inference requires reader to look out further than just the surrounding co-text which is just enough to make an associative inference (Trabasso & Magliano 1996 cited in Laing & Kamhi 2002, p. 437), it is concluded that the reader did not actively relate each different part of the next text with the old one to make meaningful association, explaining why less amount of elaboration strategy use.

With respect to the **summary strategy**, it is surprised to note that the reader used **very little of it**. During two reading comprehension tests, she summarized only three out of seven paragraphs in the first text and was not be able to summarize any of the other paragraphs in the second text. In retrospective recalls, she revealed that:

> [u]nlike the first text whose paragraphs were clearly organized so I was able to give a summary of it, but with this text, it has so many long sentences and very unclear organization. So I gave up. I did not want and was not able to do that.

Two conclusions could be made from this revelation. First of all, **summary strategy** accounted for a significant percentage of successful text comprehension. In the first TAP session with the first text, the reader had chose two wrong headings for two paragraphs and gave false answers to two comprehension questions that required test-takers to understand the main idea and purpose of the paragraph. Her weak inclination to make text summary, either mentally or taking notes, also led to weak comprehension and, at the same time, lower reading score.

The second conclusion inferred from her portfolios is supportive of the previous conclusion regarding the use of self-monitoring strategy. Once she found a text type too difficult to summary, she did not turn to any other fix-up cognitive strategies such as **elaboration**, paraphrasing (as part of **transfer** strategy) or even meaningful and purposeful **translation** to help reducing the level of text difficulty she was encountering (P2. ATC7, 8 & 10). This conclusion has also led up to the most important finding that there was **little or no active combination** within cognitive strategies and across cognitive and metacognitive strategies. No **interactive relationship** between metacognitive or cognitive strategy was found, which could be explained as the **lack of goal-orientation** when deciding to which strategy to use. For example, when planning to read the title first, she did not go on to make any inference, just simply translated the title. To put it short, the way she used the strategies seemed to help her touch on only the superficial layer of the text but not the deeper layers.

2.3.3. Research question 3: How does the use of reading comprehension strategies by successful readers differ from that by less successful readers?

In answering this research question, data used for two previous research questions were now compared and contrasted. The results have revealed that there did exist the differences in strategy use between the successful reader and the less successful reader. The following section will go into detailed differences.

2.3.3.1. Reading approach

The successful reader employed effectively and flexibly the interactive approach, which manifested itself in the active switching between top-down and bottom-up approach. Almost all the time she started out by taking a global view of the text and then moved on to process the text by attending to details. The dynamic

combination between her prior experiences and background knowledge with the new information in the text did enhance a better text comprehension. On the contrary, the less successful reader took mostly bottom-up approach and seldom casted an overall view of the text beforehand. More elaborately, she processed the text on mostly word-level and sentence-level, as explained by her reading aloud each sentence and stopped for quite a moment at difficult vocabulary. Her reading approach resulted in the prolonged time processing the text and somehow a superficial understanding of the text. The data from both think-aloud protocols and past documents both supported this conclusion.

2.3.3.2. Cognitive and metacognitive strategy use

The following table provides details on the frequency of strategy use through both verbalizations during two reading tests and thorough examination of two subjects' documents (24 articles).

Table 20: Cognitive strategy use frequency by P1 and P2

COG Strategy		RE	GR	DE	IMG	EL	TF	IN	NT	SUM	TRANS	Total
P1	2 TAPs	4	3	4	15	24	33	76	6	11	28	204
	Documents	34	47	40	N/A	112	89	156	109	24	N/A	~611
P2	2 TAPs	2	1	2	2	9	19	51	10	4	15	125
	24 articles	30	20	28	N/A	60	59	102	89	13	N/A	~401

Table 21: Metacognitive strategy use frequency by P1 and P2

META Strategy		AO	DA	SA	SM	SE	Total
P1	2TAPs	5	15	25	54	27	126
	Documents	35	48	57	N/A	7	~147
P2	2TAPs	2	3	12	15	10	42
	24 articles	12	18	28	N/A	6	~64

A quick flipping through the table reveals that the frequency of strategy uses by P1 significantly outweighed that by P2, in terms of both cognitive and metacognitive strategy group. It is noteworthy that in almost all categories, the frequency by P1 nearly doubled that by P2. In some metacognitive strategy items, P1 even used two times more than P2, which revealed P1 an active meta-reader.

With regards to metacognitive strategy, P1 displayed a considerable amount of advance organizing, directed attention and self-monitoring with frequent self-evaluation. These strategies helped her review what she was doing and guarantee her plan for next stage of comprehension. By contrast, P2 just made an occasional use of

these strategies and seldom with a clear goal orientation in mind, which sometimes left her astray from the comprehension process.

In terms of cognitive strategy, P1 made a vivid use of inferencing, elaboration, transfer and translation strategy. These strategies acted in concert to help achieve comprehension of difficult texts. In using these strategies, P1 constantly went back and forth the text to relate different part of the text together to make a connection. Frequently did she activate her prior knowledge and experience and at the same time create mental linking between information and imagery to help her retain information for longer time. It should be noted that P1 possessed considerably rich amount of background knowledge in academic-related field, which was probably accountable for most of her comprehension. Unlike P1, P2 used only a certain amount of cognitive strategies; yet, there was little or no co-operation between cognitive strategies in comprehending the text. Another significant difference is that the successful reader tended to use cognitive strategy in concert with metacognitive strategy while this was not present in the less successful reader's strategy use. This helped partially explain why the less successful reader scored lower than her counterpart.

2.3.4. General discussion

This research's findings have yielded several answers to some important issues in the reading strategy research literature. First of all, it revealed an important strategy employed by the successful reader which is self-questioning. This strategy receives little investigation into and is also excluded from most research to date. Secondly, it proved that an active combination between cognitive strategies and metacognitive strategies have a positive impact on reading comprehension performance.

The main body of findings also confirms previous research's conclusion. First of all, the good reader takes an interactive approach to reading process instead of using either top-down or bottom-up strategy while the less proficient reader tends to do so (Hosenfield 1977; Block 1986; Carell 1989; Anderson 1991; Block 1992; Rong & Xiaomay n.d.; Phakiti 2003, p.25-56). It also strengthened the finding of some research which claimed that good readers make higher strategy frequency use, in terms of both metacognitive and cognitive strategy, than less proficient readers.

The researcher was typically interested in the finding about inferencing strategy, which claimed that explanatory and predictive inferences were essential, besides associative inferences, in constructing meaningful unit of the text. This claim agreed with Trabasso and Magliano (1996)'s findings which suggested that explanatory and predictive inferences serve to unite propositions in a news story to help readers construct coherent mental representations of the text.

In processing the data, the researcher assumed that there was a connection between the amount of background knowledge and the level of reading comprehension performance. The researcher believed that there was a causal relationship between these two variables. In McNeil (2010, p.884-895)'s research article, he conducted an exploratory study into the relationship between these two aspects and concluded that there was a significant effect of background knowledge on reading comprehension. However, more empirical research is needed to validate the conclusion.

PART 3: CONCLUSION

3.1. Summary of findings

The prominent findings from these data were that the successful reader tended to be an **active planner** with **frequent self-monotoring**. Moreover, the successful reader employed flexibly the **top-down and bottom-up approach**, cast a **global view** of the text and then moved down to **word level** and went back to view the text globally when necessary. The cognitive strategies that were most frequently used during text comprehension were **elaboration** (or activating prior knowledge and relating to background knowledge), **inferencing**, **transfer** and **translation**. Furthermore, the successful reader tended to use **a combination of different cognitive strategies**, one after another to decode one meaningful unit of the text. The most prominent chain was **transfer – translation – elaboration – inferencing**. More interestingly, the subject employed strategically **both metacognitive and cognitive strategies at the same time**, using one cognitive strategy as a complement for the other metacognitive and vice versa. One notable finding from the verbal data and her reading notes while making scrapbooks revealed that the successful reader constantly engaged in **self-questioning**, in which the researcher decided to categorize it into **cognitive strategy group**. This strategy was often overlooked in most studies and even excluded from O'Malley and Chamot's framework.

Meanwhile, the less successful reader tended to use a **moderate amount of both cognitive and metacognitive strategies**; yet, the reader did not display flexibility in the use. The less successful reader approached the text at **local level**, focusing attention on word, phrase and sentence level and rarely made connection between paragraphs to decode the text globally, which denoted a significant difference from the successful reader. Hardly did the reader make a combinatory use of different cognitive strategies, nor did the reader accompany metacognitive strategy with cognitive strategy to achieve text comprehension, which differed considerably from the more successful one.

3.2. Implications

3.2.1. "Modeling what good readers do"

The first implication for curriculum improvements is based on the book by Wilhelm (2001) *Improving Comprehension with Think-aloud Strategies: Modeling What Good Readers do*. A thick body of literature and results from experimental research prove that TAP procedures have a significant impact on language learners' performance inside classroom (Roth 1965; Karpf 1972; Walker 1982; Carroll & Payne 1977; Johnson & Russo 1978 cited in Ericsson & Simon 1984). As either the teacher or excellent classmates in a language classroom can stand up and model how they complete reading task, the less proficient learners can surely benefit a lot from those verbalizations. In that way, struggling and less proficient readers can see what good readers do and apply it to their own reading process and make it their own reading strategies. Moreover, think-aloud activities also help turning reading classes into active, dynamic and social experiences with reducing boredom at times. Therefore, think-aloud procedures should be used as an instructional tool for reading classes.

3.2.2. An alternative assessment for reading course

Last but not least, the implication of this research goes for language testing and assessment. Since exams, especially final exams have long been considered to be high-stake ones, not mention that not every test can be one hundred percent reliable, a more relaxing and less fragile alternative assessment is in need to be implemented in co-ordination with test. Think-aloud protocols can allow readers to learn how to plan for reading and studying material, which demonstrates not only how to read but also why to read and when readers would use certain strategies (Davey, 1983). Moreover, the procedures can also provide data on the cognitive and decision making processes underlying that the reading scores can hardly reflect this. In other words, think-aloud protocols can help teachers fairly assess their students' reading ability, which is highly appreciated to be used together with tests.

In the context of FELTE, ULIS-VNU, TAP can be possibly used as an alternative assessment for reading courses. Teachers may require their students to choose a reading text and then record the process in which they are trying to

comprehend the text. At the end of the semester, students compile every record they make throughout the course as a TAP portfolio. The teachers then use this type of portfolio to assess students' level of reading proficiency. It is undeniable that this new proposed method may encounter some difficulties at first, among which may be students' inadequacy of aided instruments like recorder. However, trials are necessary in the first place in order to see its advantages and limitations so as to help better the current curriculum.

3.3. Limitations and suggestions for further research

Despite being cautious in every stage of conducting this research, it is hardly free from limitations. Firstly, the limitation lies the research design itself, in which case study design has been long time in doubt of validity and reliability due to its small number of participants. Secondly, the verbal report has been exposed to vulnerable attacks for which opponents would cast doubts on its reliability as scientific data and claim it as a great source of bias. Therefore, it is strongly recommended that the research be carried out in a larger population to confirm the validity of the findings. Moreover, it is strongly advisable to have more than one coder who will look at and study in-depth the transcribed verbalizations to achieve inter-coder reliability. More ideally, more research needs to be conducted into the validity and reliability of think-aloud protocols to confirm its scientific values.

In coming up with the findings, the researcher assumed that there could be some connection between these above aspects; however, due to limited time and effort, the researcher could not go further and deeper into the issue. Therefore, it is highly appreciated to have more research to look at the impact of background knowledge in the choice of strategy and the overall reading comprehension performance.

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APPENDIX I

OXFORD'S COMPREHENSIVE CLASSIFICATION OF L2 LEARNING STRATEGIES

	Strategy group	**Strategy sub-group**	**Specific strategies**
Direct	*Memory strategies*	Creating mental linkage	+ Grouping + Associating/Elaborating + Placing new words into a context
		Applying images and sounds	+ Using imagery + Semantic mapping + Using key words + Representing sounds in memory
		Reviewing well	+ Structured reviewing
		Employing action	+ Using physical response or sensation + Using mechanical techniques
	Cognitive strategies	Practicing	+ Repeating + Formally practicing with sounds and writing systems + Recognizing and using formulas and patterns + Recombining + Practicing naturalistically
		Receiving and sending messages	+ Getting the idea quickly + Using resources for receiving and sending messages
		Analyzing and reasoning	+ Reasoning inductively + Analyzing expressions + Analyzing contrastively (across language) + Translating + Transferring
		Creating structure for input and output	+ Taking notes + Summarizing + Highlighting
	Compensation strategies	Guessing intelligently	+ Using linguistic clues + Using other clues
		Overcoming limitations in speaking and writing	+ Switching to the mother tongue + Getting help + Using mime or gesture + Avoiding communication partially or totally + Selecting the topic + Adjusting or approximating the message + Coining words + Using circumlocution or synonym

Indirect	Metacognitive strategies	Centering your learning	+ Overviewing and linking with already know material + Playing attention + Delaying speech production to focus on listening
		Arranging and planning	+ Finding out about language learning + Organizing + Setting goal and objectives + Identifying the purpose of a language task + Seeking practice opportunities
		Evaluating your learning	+ Self-monitoring + Self-evaluating
	Affective strategies	Lowing your anxiety	+ Using progressive relaxation, deep breathing, or meditation + Using music + Using laughter
		Encouraging yourself	+ Making positive statements + Taking risks wisely + Rewarding yourself
		Taking your emotional temperature	+ Listening to your body + Using checklist + Writing a language learning diary + Discussing your feelings with someone else
	Social strategies	Asking questions	+ Asking for clarification or verification + Asking for correction
		Cooperating with others	+ Cooperating with peer + Cooperating with proficient users of the new language
		Empathizing with others	+ Developing cultural understanding + Becoming aware of other's thoughts and feelings

APPENDIX II
SURVEY OF READING STRATEGIES
(Adapted from Kouider Mokhtari and Ravi Sheorey, 2002)

My name is **Nguyen Thi Quyen** from the Faculty of English Language Teacher Education. I am conducting a research into the use of reading comprehension strategies by fourth year fast-track students. I would like to ask you to complete this survey as part of the data collection process.

The purpose of this survey is to collect information about the various strategies you use when you read *school-related academic materials English* (e.g., reading textbooks; homework or examinations; reading journal articles, etc.). Each statement is followed by five numbers, *1, 2, 3, 4, and 5*, and each number means the following:

'1' means that 'I never or almost never do this'.
'2' means that 'I do this only occasionally'.
'3' means that 'I sometimes do this'. (about 50% of the time)
'4' means that 'I usually do this'.
'5' means that 'I always or almost always do this'.

After reading each statement, put an **X** on the box corresponding to the number (1, 2, 3, 4, or 5) which applies to you. Please note that there are no right or wrong responses to any of the items on this survey.

NO.	STATEMENT	1	2	3	4	5
1	I have a purpose in mind when I read.					
2	I take notes while reading to help me understand what I read.					
3	I think about what I know to help me understand what I read.					
4	I take an overall view of the text to see what it is about before reading it.					
5	When text becomes difficult, I read aloud to help me understand what I read.					
6	I think about whether the content of the text fits my reading purpose.					
7	I read slowly and carefully to make sure I understand what I am reading.					
8	I review the text first by noting its characteristics like length and organization.					
9	I try to get back on track when I lose concentration.					
10	I underline or circle information in the text to help me remember it.					
11	I adjust my reading speed according to what I am					

	reading.					
12	When reading, I decide what to read closely and what to ignore.					
13	I use reference materials (e.g. a dictionary) to help me understand what I read.					
14	When text becomes difficult, I pay closer attention to what I am reading.					
15	I use tables, figures, and pictures in text to increase my understanding.					
16	I stop from time to time and think about what I am reading.					
17	I use context clues to help me better understand what I am reading.					
18	I paraphrase (restate ideas in my own words) to better understand what I read.					
19	I try to picture or visualize information to help remember what I read.					
20	I use symbols like bold face and italics to identify key information.					
21	I critically analyze and evaluate the information presented in the text.					
22	I go back and forth in the text to find relationships among ideas in it.					
23	I check my understanding when I come across new information.					
24	I try to guess what the content of the text is about when I read.					
25	When text becomes difficult, I re-read it to increase my understanding.					
26	I ask myself questions which I expect to find the answer later in the text					
27	I check to see if my guesses about the text are right or wrong.					
28	When I read, I guess the meaning of unknown words or phrases.					
29	When reading, I translate from English into my native language.					
30	When reading, I think about information in both English and my mother tongue.					

PERSONAL INFORMATION

Name: _____.

Years of studying English (*Please specify*): _____year(s)

APPENDIX III

IELTS Reading Test 1

The Nature of Genius

There has always been an interest in geniuses and prodigies. The word 'genius', from the Latin *gens* (= family) and the term 'genius', meaning 'begetter', comes from the early Roman cult of a divinity as the head of the family. In its earliest form, genius was concerned with the ability of the head of the family, the *paterfamilias*, to perpetuate himself. Gradually, genius came to represent a person's characteristics and thence an individual's highest attribute derived from his 'genius' or guiding spirit. Today, people still look to stars or genes, astrology or genetics, in the hope of finding the source of exceptional abilities or personal characteristics.

The concept of gifts has become part of our folk culture, and attitudes are ambivalent towards them. We envy the gifted and mistrust them. In the mythology of giftedness, it is popularly believed that if people are talented in one area, they must be defective in another, that intellectuals are impractical, that prodigies burn too brightly too soon and burn out, that gifted people are eccentric, that they are physical weaklings, that there's a thin line between genius and madness, that genius runs in families, that the gifted are so clever they don't need special help, that giftedness is the same as having a high IQ, that some races are more intelligent or musical or mathematical than others, that genius goes unrecognised and unrewarded, that adversity makes men wise or that people with gifts have a responsibility to use them. Language has been enriched with such terms as 'highbrow', 'egghead', 'blue-stocking', 'wiseacre', 'know-all', 'boffin', and, for many, 'intellectual' is a term of denigration.

The nineteenth century saw considerable interest in the nature of genius, and produced not a few studies of famous prodigies. Perhaps for us today, two of the most significant aspects of most of these studies of genius are the frequency with which early encouragement and teaching by parents and tutors had beneficial effects on the intellectual, artistic or musical development of the children but caused great difficulties of adjustment later in their lives, and the frequency with which abilities went unrecognised by teachers and schools. However, the difficulty with the evidence produced by these studies, fascinating as they are in collecting together anecdotes and apparent similarities and exceptions, is that they are not what we would today call norm-referenced. In other words, when, for instance, information is collated about early illnesses, methods of upbringing, schooling, etc., we must also take into account information from other historical sources about how common or exceptional these were at the time. For instance, infant mortality was high and life expectancy much shorter than today, home tutoring was common in the families of the nobility and wealthy, bullying and corporal punishment were common at the best independent schools and, for the most part, the cases studied were members of the privileged classes. It was only with the growth of paediatrics and psychology in the twentieth century that studies could be carried out on a more objective, if still not always very scientific, basis.

Geniuses, however they are defined, are but the peaks which stand out through the mist of history and are visible to the particular observer from his or her particular vantage

point. Change the observers and the vantages points, clear away to those whom we recognise for their outstanding achievements and who stand near the end of the continuum of human abilities which reaches back through the mundane and mediocre to the incapable. There is still much truth in Dr Samuel Johnson's observation, 'The true genius is a mind of large general powers, accidentally determined to some particular direction.' We may disagree with the 'general', for we doubt if all musicians of genius could have become scientists of genius vice versa, but there is no doubting the accidental determination which nurtured or triggered their gifts into those channels into which they have poured their powers so successfully. Along the continuum of abilities are hundreds of thousands of gifted men and women, boys and girls.

What we appreciate, enjoy or marvel at in the works of genius or the achievements of prodigies are the manifestations of skills or abilities which are similar to, but so much superior to, our own. But that their minds are not different from our own is demonstrated by the fact that the hard-won discoveries of scientists like Kepler or Einstein become the commonplace knowledge of schoolchildren and the once outrageous shapes and colours of an artist like Paul Klee so soon appear on the fabrics we wear. This does not minimise the supremacy of their achievements, which outstrip our own as the sub-four-minute milers outstrip our jogging.

To think of genius and the gifted as having uniquely different brains is only reasonable if we accept that each human brain is uniquely different. The purpose of instruction is to make us even more different from one another, and in the process of being educated we can learn from the achievements of those more gifted than ourselves. But before we try to emulate geniuses or encourage our children to do so we should note that some of the things we learn from them may prove unpalatable. We may envy their achievements and fame, but we should also recognise the price they may have paid in terms of perseverance, single-mindedness, dedication, restrictions on their personal lives, the demands upon their energies and time, and how often they had to display great courage to preserve their integrity to make their way to the top.

Genius and giftedness are relative description terms of no real substance. We may, at best, give them some precision by defining them and placing them in a context but, whatever we do, we should never delude ourselves into believing that gifted children or geniuses are different from the rest of humanity, save in the degree to which they have developed the performance of their abilities.

COMPREHENSION QUESTIONS

Task I: Below are listed some popular beliefs about genius and giftedness.
Which **FIVE** of these beliefs are reported by the writer of the text?

A   Truly gifted people are talented in all areas.
B   The talents of geniuses are soon exhausted.
C   Gifted people should use their gifts.
D   A genius appears once in every generation.
E   Genius can be easily destroyed by discouragement.

F   Genius is inherited.

G   Gifted people are very hard to live with.

H   People never appreciate true genius.

I   Geniuses are natural leaders.

J   Gifted people develop their greatness through difficulties.

K   Genius will always reveal itself.

Task II: Do the following statements agree with the information given in the Reading passage?

> ***TRUE***   *if the statement agrees with the information*
> ***FALSE*** *if the statement contradicts the information*
> ***NOT GIVEN***   *if there is no information on this*

a) Nineteenth-century studies of the nature of genius failed to take into account the uniqueness of the person's upbringing.

b) Nineteenth-century studies of genius lacked both objectivity and a proper scientific approach.

c) A true genius has general powers capable of excellence in any area.

d) The skills of ordinary individuals are in essence the same as the skills of prodigies.

e) The ease with which truly great ideas are accepted and taken for granted fails to lessen their significance.

f) Giftedness and genius deserve proper scientific research into their true nature so that all talent may be retained for the human race.

g) Geniuses often pay a high price to achieve greatness.

h) To be a genius is worth the high personal cost.

IELTS Reading Test 2

The Meaning and Power of Smell

The sense of smell, or olfaction, is powerful. Odours affect us on a physical, psychological and social level. For the most part, however, we breathe in the aromas which surround us without being consciously aware of their importance to us. It is only when the faculty of smell is impaired for some reason that we begin to realise the essential role the sense of smell plays in our sense of well-being.

A   A survey conducted by Anthony Synott at Montreal's Concordia University asked participants to comment on how important smell was to them in their lives. It became apparent that smell can evoke strong emotional responses. A scent associated with a good experience can bring a rush of joy, while a foul odour or one associated with a bad memory may make us grimace with disgust. Respondents to the survey noted that many of their olfactory likes and dislikes were based on emotional associations. Such associations can be powerful enough so that odours that we would generally consider fragrant become disagreeable for particular individuals. The perception of smell,

therefore, consists not only of the sensation of the odours themselves, but of the experiences and emotions associated with them.

B   Odours are also essential cues in social bonding. One respondent to the survey beloved that there is no true emotional bonding without touching and smelling a loved one. In fact, infants recognise the odours of their mothers soon after birth and adults can often identify their children or spouses by scent. In one well-known test, women and men were able to distinguish by smell alone clothing worn by their marriage partners from similar clothing worn by other people. Most of the subjects would probably never have given much thought to odour as a cue for identifying family members before being involved in the test, but as the experiment revealed, even when not consciously considered, smells register.

C   In spite of its importance to our emotional and sensory lives, smell is probably the most undervalued sense in many cultures. The reason often given for the low regard in which smell is feeble and undeveloped. While it is true that the olfactory powers of humans are nothing like as fine as those possessed by certain animals, they are still remarkably acute. Our noses are able to recognise thousands of smells, and to perceive odours which are present only in extremely small quantities.

D   Smell, however, is a highly elusive phenomenon. Odours, unlike colours, for instance, cannot be named in many languages because the specific vocabulary simply doesn't exist. 'It smells like …,' we have to say when describing an odour, struggling to express our olfactory experience. Nor can odours be recorded: there is no effective way to either capture or store them over time. In the realm of olfaction, we must make do with descriptions and recollections. This has implications for olfactory research.

E   Most of the research on smell undertaken to date has been of a physical scientific nature. Significant advances have been made in the understanding of the biological and chemical nature of olfaction, but many fundamental questions have yet to be answered. Researchers have still to decide whether smell is one sense or two – one responding to odours proper and the other registering odourless chemicals in the air. Other unanswered questions are whether the nose is the only part of the body affected by odours, and how smells can be measured objectively given the non-physical components. Questions like these mean that interest in the psychology of smell is inevitably set to play an increasingly important role for researchers.

F   However, smell is not simply a biological and psychological phenomenon. Smell is cultural, hence it is a social and historical phenomenon. Odours are invested with cultural values; smells that are considered to be offensive in some cultures may be perfectly acceptable in others. Therefore, our sense of smell is a means of, and model for, interacting with the world. Different smells can provide us with intimate and emotionally charged experiences and the value that we attach to these experiences is interiorised by the members of society in a deeply personal way. Importantly, our commonly held feelings about smells can help distinguish us from other cultures. The study of the cultural history of smell is, therefore, in a very real sense, an investigation into the essence of human culture.

COMPREHENSION QUESTIONS

Task 1: Choose the correct heading for each paragraph from the list of headings below.

I	The difficulties of talking about smells
II	The role of smell in personal relationships
III	Future studies into smell

IV	The relationship between the brain and the nose
V	The interpretation of smells as a factor in defining groups
VI	Why our sense of smell is not appreciated
VII	Smell is our superior sense
VIII	The relationship between smell and feelings

a) Paragraph A
b) Paragraph B
c) Paragraph C
d) Paragraph D
e) Paragraph E
f) Paragraph F

Task 2: **Circle the best answer (A, B, C or D)**

1. **According to the introduction, we become aware of the importance of smell when**
   A. we discover a new smell.
   B. we experience a powerful smell.
   C. our ability to smell is damaged.
   D. we are surrounded by odours.

2. **The experiment described in paragraph B**
   A. shows how we make use of smell without realizing it.
   B. demonstrates that family members have a similar smell.
   C. proves that a sense of smell is learned.
   D. compares the sense of smell in males and females.

3. **What is the writer doing in paragraph C?**
   A. supporting other research
   B. making a proposal
   C. rejecting a common belief
   D. describing limitations

4. **What does the writer suggest about the study of smell in the atmosphere in paragraph E?**
   A. The measurement of smell is becoming more accurate.
   B. Researchers believe smell is a purely physical reaction.
   C. Most smells are inoffensive.
   D. Smell is yet to be defined.

Task 2: **Choose ONE WORD ONLY from the passage for each answer.**

1. Tests have shown that odours can help people recognise the ....
2. Certain linguistic groups may have difficulty describing smell because they lack the appropriate ....
3. The sense of smell may involve response to .... which do not smell, in addition to obvious odours.
4. Odours regarded as unpleasant in certain .... are not regarded as unpleasant in others.

APPENDIX IV

WARM-UP PROCEDURE FOR THINK-ALOUD REPORT SESSION

In this experiment we are interested in what you think about when you find answers to some questions that I am going to ask you to answer. In order to do this I am going to ask you to THINK ALOUD as you work on the problem given. What I mean by think aloud is that I want you to tell me EVERYTHING you are thinking from the time you first see the question until you give an answer. I would like you to talk aloud CONSTANTLY from the time I present each problem until you have given your final answer to the question. I don't want you to try to plan out what you say or try to explain to me what you are saying. Just act as if you are alone in the room speaking to yourself. It is most important that you keep talking. If you are silent for any long period of time I will ask you to talk. Do you understand what I want you to do?

Good, now we will begin with some practice problems. First, I want you to multiply these two numbers in your head and tell me what you are thinking as you get an answer.

"What is the result of multiplying 24 x 36?"

Good, now I want to see how much you can remember about what you were thinking from the time you read the question until you gave the answer. We are interested in what you actually can REMEMBER rather than what you think you must have thought. If possible I would like you to tell about your memories in the sequence in which they occurred while working on the question. Please tell me if you are uncertain about any of your memories. I don't want you to work on solving the problem again, just report all that you can remember thinking about when answering the question. Now tell me what you remember.

Good. Now I will give you two more practice problems before we proceed with the main experiment. I want you to do the same thing for each of these problems. I want you to think aloud as before as you think about the question, and after you have answered it I will ask you to report all that you can remember about your thinking. Any questions? Here is your next problem.

"How many windows are there in your parent's house"

Now tell me all that you can remember about your thinking.

Good, now here is another practice problem. Please think aloud as you try to answer it. There is no need to keep count, I will keep track for you.

"Name 20 animals." Now tell me all that you can remember about your thinking.

APPENDIX V

ANALYSIS FRAMEWORK (Adapted from O'Malley & Chamot)

Reading strategies	DEFINITION	EXAMPLE OF VERBAL DATA
Metacognitive strategies: Thinking about the learning process, planning information, monitoring the learning task and evaluating how well one has started.		
Planning strategies	*are those directed at the regulations of the course of their own thinking*	
Advance organizer (AO)	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.	I preview the headings and illustrations to get the main idea of the text before reading. I skim through the text to understand main ideas of the texts before focusing on details.
Directed attention (DA)	Deciding in advance to attend in general to a learning task and to ignore the irrelevant distracters.	Before reading, I read the comprehension questions to decide important information that should be noted. I skip the words that are not essential for comprehending the texts while reading.
Selective (SA) attention	Deciding in advance to attend to specific aspects of input, often by scanning for key words, concepts and/or linguistic markers.	I scan for key words or concepts that are closely related to the questions in order to answer them. I choose reading strategies according to my reading purposes.
Monitoring strategies	*are deliberate actions by learners to check, monitor and evaluate their thinking and performance so verifications can be made if needed in order to perform tasks successfully.*	
Self-monitoring (SMON)	Checking one's comprehension during reading while it is taking place.	I mentally translate/ orally translate the text into Vietnamese to see whether it makes sense or not. I read slowly the part, repeating words over and over again to stress myself on that word. I question against the text to see if it makes sense.
Self-evaluation (SE)	Checking the outcomes of one's own language against a standard after it has been completed.	I check if my answers to the questions are correct or wrong after reading.
Cognitive strategies: Interacting with the material to be learned, manipulating over the material mentally or physically, or applying specific techniques to a learning task.		
Resourcing (RE)	Using target language reference such as dictionaries, encyclopedias or textbooks.	I use a dictionary to look up words when encountering a new word while reading.
Grouping (GR)	Classifying words, terminology or concepts according to their attributes or meaning.	I can determine the function of a word in a sentence while reading.
Deduction (DE)	Applying rules to understand the text or making up rules based on language analysis	
Imagery (IMG)	Using visual aids (either mental or actual) to understand or remember new information	
Elaboration (EL)	Relating the new information to prior knowledge, relating different parts of new information to each other or making meaningful personal	I relate my prior knowledge to the information of the texts I am reading.

	associations with the new information.	
Transfer (TF)	Using previous linguistic knowledge or prior skills to assist comprehension or production.	I use my knowledge of grammar or vocabulary to help understand difficult parts in reading texts.
Inferencing (IN)	Using available information to guess meanings of new items, predict outcomes or fill in the missing information.	I guess meanings of new words using the available information.
Note taking (NT)	Writing down keywords or concepts in abbreviated verbal, graphic, or numerical form while listening or reading.	I write down key words while reading.
Summarizing (SUM)	Making a mental, oral, or written summary of new information gain through linguistic skills.	I mentally summarize the main ideas of the texts after reading.
Translation (TRANS)	Using the first language as a base for understanding and/or producing the L2.	I translate the reading text into Vietnamese to understand it more clearly.

Table 3: Reading strategies coding categories adapted from O'Malley and Chamot (1990, p.119)

THINK-ALOUD PROTOCOL HA LINH 6ᵗʰ March

Concurrent verbal report

The Meaning and Power of Smell Ý nghĩa và … chắc là nó sẽ nói về các loại mùi hương, nó có năng lực như thế nào, ảnh hưởng đến con người như thế nào, chắc là sẽ nói về cái , kiểu có cái nước hoa nó có mùi hương sexy, có cái sẽ là biểu tượng của flirting, có kiểu sẽ là thể hiện sự innocence hay gì đấy. Tớ preview heading thì nghĩ là như vậy.

[**25:30** Subject immediately began with the first paragraph of the reading text

Olfaction, olfaction, olfaction. Từ này mình không biết nghĩa nhưng thấy ghi là smell or olfaction nên chắc là từ cùng nghĩa với smell. Odour giống nghĩa của từ aroma. Smell, olfaction, odour vơi aroma [subject underlined 4 words] là 4 từ đồng nghĩa. Faculty of smell, trung khu [guessing], cơ quan thính giác, xử lý mùi hương. Impaired không phải là từ mới, impaired không phải là "hỏng" đúng không? Impair repair. Tại sao lại có nghĩa là hỏng nhỉ, tại sao hỏng rồi realize its essential role. [Subject asked herself Why-question]. Tại sao hỏng rồi mới begin to realize its essential role? À, mình nghĩ đến những lúc bị tịt mũi. Mình đồng ý với ý kiến này, kiểu như là đến khi nào bị mất khả năng ngửi thì mới biết quý trọng nó [silent: 27:55-28:13]. Grimace? [Silent to 28:28] olfactory. [Silent to 28:52] Fragrant, fragrant có nghĩa là odour nhưng là smell good đúng không? [Silent to 30:26] Feeble, có lẽ nó bằng nghĩa với từ undeveloped, maybe, nhưng không chắc, nhưng chắc là nó có nghĩa negative. [Silent to 31:36] Acute có phải là acurate không? Nghĩa là chính xác [32:31: Turn to the next page] [Silent to 33:50] Interior… Interior có phải nghĩa là phía trong đúng không? [**34:22** Subject finished reading through the reading passage, which included understanding the details of this passage]

Retrospective verbal report

Probe (P): So have you just skimmed through the reading passage?

Response (R): Yes.

P: Did you try to understand the passage in detail?

R: Yes.

P: Do you normally do that when you read?

R: Yes. And when it comes to reading comprehension questions which are difficult, I go back the reading passage and try to better understand the details.

P: Were there any occasions when you just skipped the words that you did not consider very important?

R: Yes

P: In reading this passage, did you think about any key words?

R: No

P: Did you want to use dictionary?

R: No, I didn't. I considered that I was doing an exam so I did not try to use dictionary.

P: So how could you know the new words?

R: I guessed the words using co-text, and root-word like impair, repair

P: Were there any occasions when any sudden ideas about smell crossed your mind?

R: When reading about the test in which people recognized their spouse's clothing, I related this test to my high school friend. She liked a boy and could recognize his clothes among others'. I could not do this. I think the information in the text is quite true. There are people who can do this but I can't.

P: Were there any complex grammatical structures?

R: I did not pay attention to any.

P: Did you base on any knowledge of grammar and vocabulary to understand the text?

R: Yes, of course.

P: Did you make guesses when encountering new words in this text?

R: Yes

P: After you have read everything, did you think about the overall meaning of the passage?

R: Yes. Actually I know that it is already in the title of the reading text.

P: Were there any parts of the text that you found difficult to understand?

R: Yes, sometimes. I have to reread to fully understand.

P: Did you translate the text into Vietnamese?

R: No, I didn't.

P: Were there any occasions when you felt annoyed or irritated while reading the text and then you forced yourself to go back to the text?

R: Sometimes I felt a bit distract but then I read louder to get myself back to the text.

P: Were you distracted by outside noise such as the tick tack of the clock or the bell ringing?

R: No. I get acquainted to those kinds of noise.

WHILE DOING COMPREHENSION QUESTIONS

Concurrent verbal report

Task 1: [Start at 38:34, finish at 45:40] Choose the correct heading (This task requires reader to understand the overall meaning of each paragraph)

I read the headings that the task gives first. *The difficulties of talking about smells…* [Translate] Các khó khăn để nói về smell chắc là cái đoạn không biết dùng từ nào để describe. [Refer back to the reading passage, underline *unlike colours*, *cannot be named*, very quickly to locate the information] *The role of smell in personal relationships* [Gaze to paragraph B] [Asking herself questions] *social bonding* và *personal relationships* có giống nhau không nhỉ? Thôi để tạm là B. [Skip the next heading] *The relationship between the brain and the nose* [40:18] [40:50] *brain and nose* [Skip to the next heading 40:58] *The interpretation of smells as a factor in defining groups* chắc là culture, defining group chắc là liên quan đến culture. Để là F. [41:35] *Why our sense of smells is not appreciated* [Gaze and point to the paragraph C] chắc là cái này, *undervalued*. Chọn C. [41:58] *Smell is our superior sense* [Point to D] *elusive* nghĩa là gì nhỉ? [Skip to the next heading. *The relationship between smell and feelings* Chắc là A rồi. [Look through the answers that she has given] Còn lại D và E. [Skim through the reading passage, focus on paragraph D and E] [44:48] Chỉ có thể là E. [Read again some first lines of the passage E] [45:13] *Future studies into smell* này Nói về nghiên cứu trong tương lai. Cái này nói về cái ĐÃ và ĐANG được nghiên cứu đúng không?

Retrospective verbal report

P: Have you finished? Are you sure of all your answers?

R: Maybe

P: How did you come to choose heading VIII for A.

R: Lúc trước mình đọc qua và mình nhớ mang máng. Đấy thì là cái đoạn này nó…mình nhớ nói nói ngay từ đầu cái sự liên quan giữa smell và feeling nên nó sẽ là đoạn A. Thực ra lúc đầu mình đọc lướt qua cái này (list of heading) để xem cái nào obvious nhất để chọn trước. Thường thì cách mình làm những bài này là lần đầu tiên đọc, mình đọc càng kĩ càng tốt. Rồi đến lúc mình làm, mình đọc

qua những cái nào mình còn nhớ lại trong đầu rồi chọn ngay lập tức. Đến lúc có những câu hơi khó khó thì mình sẽ tìm đọc lại. Ban đầu mình thường cứ đọc cái heading trước rồi nối sau đúng không, lúc sau chỗ nào khó thì mình tìm đọc lại đoạn văn ấy trước rồi quay sang nhìn cái nào hợp nhất thì mình chọn. Còn câu B, relationships thì nhớ ra cái vụ mà vợ chồng ngửi áo của nhau xong là phát hiện ra đâu là vợ là chồng mình xong mình tìm cái đoạn đấy. Còn đoạn C thì mình chọn đầu tiên vì nó obvious. Nhờ vào cái chỗ smell undervalued. Còn câu D thì mình cũng chọn đầu tiên nhưng không sure lắm nên là mình để sau. Nhờ cái đoạn nó bảo không thể diễn tả smell bằng lời như colours các thứ ấy, thì mình nhớ ngay đến đoạn này, nhưng mà đoạn sau của đoạn D thì không hẳn nói về cái đấy lắm nên mình không sure. Còn lúc sau mình đọc lại xong mình check tất cả các đoạn thì các heading khác không hợp lắm. Còn đoạn E thì là đoạn duy nhất nói về studies. Còn đoạn F thì defining groups, mình nghĩ là kiêu defining group sẽ liên quan đến xác định các culture, mà cái culture thì mình nghĩ là đoạn cuối

Task 2: [Start at: 50:26 – 54:58] This task checks if reader understands details.

For Question 1 I choose C, impaired and damaged are the two synonyms. I remember read the word *impaired*.

For Question 2 I read through the question and four options. I choose A because I remember that normally people are unaware that they can actually smell their husband's smell but in the experiment they can.

For Question 3, I remember what the paragraph C is about already, so I just focus on reading the question and four options. *Rejecting a common belief*. I am pointing to the words *undervalued* and *are able to recognise thousands of smell,* from here I can understand that our sense of smell is very effective and powerful. *Common belief* here ý là nói về undervalued đúng không? Và ông tác giả này đang phản biện lại điều đó.

For Question 4, I pay attention to the words *suggest, study of smell* in the question... Then I read through the four options. Mình nghĩ là A không đúng, vì trong đoạn văn nói là unanswer question làm thế nào để cho smells được measured objectively, becoming more accurate này là chưa đúng. Cái C thì chắc chắn là không đúng rồi. Smell is yet to be defined không chuẩn lắm, tại cái đoạn này nó không hẳn là nói về cái đấy, nó chỉ nói là các cơ quan nào liên quan đến việc ngửi thôi, một hay hai cơ quan.

P: How did you understand the introduction part?

R: It tells us about smell, smell can impact physical and psychological. I use it as a directional tool for the rest of the text.

P: OK. How about part A?

R: It tells about the relationship between smell and feelings. And about B, I remember the test first, and I imagine people smelling clothes of others.

D explains why smells cannot be described through words, because of the lack of vocabulary.