USE OF METACOGNITIVE AND COGNITIVE STRATEGIES IN SUMMARIZING
EXPOSITORY TEXT BY ESL UNDERGRADUATES

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ABSTRACT

The purpose of this study was to examine how the ESL undergraduates shifted between the metacognitive and cognitive strategies when they summarized an expository text. It also investigated the metacognitive and cognitive strategies of summarizing the expository text among ESL undergraduates. The sample consisted of five ESL undergraduates from a Malaysian public university. The source of data included the participants' think aloud protocols, semi-structured interview, the original summary scripts and the learners' summary drafts. The type of source material for summarizing was an expository text. The theoretical framework of this study was built based on two models of summarizing. The Kintsch and van Dijk model (1978) was used in order to describe the different steps of summarizing by ESL undergraduates while they are summarizing the expository text. Likewise, Sarig's recursive-corrective summary processes model (1993) was applied to identify the metacognitive and cognitive strategies which ESL undergraduates used in summarizing the expository text and also their shifts between these strategies. The results of the study revealed that there was an interactive, dynamic and recursive relationship between the undergraduates' metacognitive and cognitive strategies. Furthermore, the recursive-interactive summarizing processing model was developed based on the interactions between the participants' shifts between the metacognitive and the cognitive strategies. The relationship of the metacognitive and cognitive strategies was presented. The data also presented "planning" and "assessing" as the main categories of metacognitive strategies and "operating" as the main category of cognitive strategies which the participants used in summarizing the expository text. Each main category was divided into different sub-categories. Moreover, the steps of summarizing in the current study were almost the same as the three macro-structures

or steps suggested by Kintsch and van Dijk (1978): "selection", "generalization" and "construction". In other words, the undergraduates read the original material, comprehended the text and selected the main ideas in the reading part and wrote their drafts and revised them in the writing part of summarizing the expository text. This study is beneficial for students in order to be aware of summarizing skills and use them in their lessons, for teachers in order to be able to teach the strategies in the classes and for the education system and syllabus designers in order to include the metacognitive and cognitive strategies in their academic texts.

Penggunaan Strategi Metakognitif Dan Kognitif Dalam Ringkasan Teks Ekspositori Oleh Siswa-siswi ESL

Abstrak

Tujuan kajian ini adalah untuk mengkaji bagaimana siswa-siswi dalam konteks Bahasa Inggeris sebagai Bahasa kedua beralih antara strategi-strategi metakognitif dan kognitif apabila mereka meringkaskan teks ekspositori. Ia juga mengkaji strategi-strategi metakognitif dan kognitif meringkas teks ekspositori dalam kalangan siswa-siswi dalam konteks Bahasa Inggeris sebagai Bahasa kedua. Sampel kajian terdiri daripada lima siswa-siswi dalam konteks Bahasa Inggeris sebagai Bahasa kedua dari sebuah universiti awam Malaysia. Sumber data merangkumi protokol "*Think Aloud*" siswa-siswi, temu bual separa struktur, skrip ringkasan teks asal dan draf ringkasan mereka. Bahan sumber untuk kajian ringkasan ini adalah teks jenis ekspositori. Kerangka teori untuk kajian ini dibina berdasarkan dua model ringkasan. Model Kintsch dan van Dijk (1978) digunakan untuk menghuraikan pelbagai langkah proses ringkasan oleh siswa-siswi ESL apabila mereka meringkaskan teks ekspositori. Begitu juga, model *recursive-corrective summary* processes oleh Sarig (1993) diaplikasi untuk mengenal pasti strategi metacognitive dan kognitif yang digunakan oleh siswa-siswi ESL dalam ringkasan teks ekspositori dan juga peralihan mereka antara strategi-strategi tersebut. Hasil kajian menunjukkan bahawa terdapat hubungan interaktif, dinamik dan rekursif antara strategi-strategi metakognitif dan kognitif siswa-siswi. Tambahan pula, model pemprosesan ringkasan rekursif-interaktif dibentuk berdasarkan interaksi antara peralihan strategi-strategi metakognitif dan kognitif. Hubungan antara strategi metakognitif dan kognitif juga dilaporkan. Data juga menunjukkan "perancangan" dan "penilaian" sebagai kategori-kategori utama strategi metakognitif dan "operasi" sebagai kategori utama strategi

kognitif yang digunakan oleh peserta semasa meringkas teks ekspositori. Setiap kategori utama dibahagikan kepada sub-kategori yang berbeza. Tambahan pula, langkah-langkah ringkasan dalam kajian ini hampir sama dengan tiga langkah *macro-structures* oleh Kintsch and van Dijk (1978) iaitu: "*selection*" (pemilihan), "*generalization*" (generalisasi) dan "*construction*" (pembinaan). Dalam erti kata lain, siswa-siswi membaca bahan asal, memahami teks dan memilih idea utama dalam bahagian pembacaan dan menulis draf mereka dan memurnikan dalam bahagian penulisan ringkasan teks ekspositori. Kajian ini memanfaatkan para pelajar agar peka kepada kemahiran meringkas dan menggunakan kemahiran tersebut dalam pelajaran mereka, bagi guru untuk mengajar strategi-strategi dalam kelas, bagi sistem pendidikan dan pembentuk sukatan pelajaran agar memasukkan strategi-strategi metakognitif dan kognitif dalam teks akademik mereka.

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DEDICATED

TO

My late father, Abdolrahim Taheri Moghaddam,

My mother, Iran Jamshak Asl,

Who stayed with me and endured the prolonged absence from Iran

during my PhD program,

My brother, Abdolkhalgh Taheri Moghaddam

&

My husband, Seyedmahmoodreza Razavi

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ESL   English as a Second Language

MUET   Malaysian University English Test

TESL   Teaching English as Second language

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Chapter 1 Introduction

This chapter covers the background, statement of problem, objectives, research questions, significance of study, and definition of terms in the study.

Background of the Study

Summary writing, metacognitive and cognitive strategies. Studies on summary writing show that summarization is one of the core activities in the English academic writing contexts such as schools, universities, conferences and symposiums, and it is well documented in psycholinguistic and educational fields (Abrams & Byrd, 2016; Anderson & Hidi, 1988; Baba, 2009; Dennis & Sharp, 1974; Hood, 2008; Horowitz, 1986; John, 1985a; Sajedi, 2014; Wichadee, 2014). Similarly, summary writing helps students not only to monitor comprehension but also to improve their writing skills (Baumann, 1984; Brown, Campione, & Day, 1981; Hare & Borchardt 1984; Kirkland & Saunders, 1991). However, little attention has been paid to summarization strategies in the field of second language.

In general, studies of L2 summary writing have been adopted from L1 summary writing (Johns & Mayes, 1990; Sarig, 1993; Yang & Shi, 2003) which basically investigated the effective way of shortening and condensing the source material (Abrams & Byrd, 2016; Brown & Day, 1983; Keck, 2014; Hidi & Anderson, 1986; Miller, Mitchell & Pessoa, 2016; Sherrard, 1986; Winograd, 1984; Yasuda 2015). Some studies also made comparisons between L1 and L2 studies (Moghaddam, 2006; Yu, 2007). Among different research in the second language, only a limited number of studies (Hamed, Behnam & Saiedi, 2014; Merchie & Keer, 2016; Sarig, 1993; Yang & Shi, 2003) identified the metacognitive and cognitive strategies of summary writing, even though "summarization is a major issue in literacy development and content learning" (Grabe, 2003, p. 252).

Likewise, metacognitive strategies play a significant role in summary writing (Brown et al., 1981; Hamed et al. 2014; Kirkpatrick & Klein, 2009; Kirkland & Saunders, 1991; Merchie & Keer, 2016; Miller et al. (2016). According to Brown et al. (1983) and Öz (2016), adult university students are unable to utilize appropriate planning if they are unaware of metacognitive strategies. Metacognition awareness is actively involved in the metacognitive strategies and it facilitates the learner to write summaries.

Moreover, recent research highlighted the significant role of the metacognitive strategies in order to comprehend academic texts (Panahandeh & Esfandiari Asl, 2014). Considering that summarizing consists of reading and writing, both reading comprehension and writing are involved in the summarization process. Therefore, students are unable to understand the text and go beyond the surface meaning of the text without metacognition.

In addition, there is a correlation between the students' writing performance and the use of metacognitive strategies during writing the academic text. As a consequence, students are successful in summarizing academic texts effectively only if they have awareness and knowledge of their own cognitive strategies during summarizing the text. In fact, the common problem of L2 learners in summarizing academic texts is the lack of monitoring and controlling of their own cognitive strategies during summarizing (Panahandeh & Esfandiari Asl, 2014). Metacognitive strategies require second language learners not only to think about their own thinking, while they are engaged in academic tasks (Cubukcu, 2008), but also to monitor and direct their cognitive strategy processing for successful performance (Phakiti, 2003).

On the other hand, the cognitive strategies are considered important in summarizing ability. As Brown et al. (1981) pointed out, the process which includes cognitive strategies of summarization itself can facilitate learning to clarify the meaning and recognize the significance of the discourse. As a matter of fact, summarizing is a complex task in which the learners have to write through several drafts (Anderson & Hidi, 1988; Brown & Day, 1983; Cumming, Lai & Cho, 2016; Garner, 1985; Johns, 1985a, 1985b; Li, 2014; Marzec-Stawiarska, 2016; Sajedi, 2014; Sarig, 1989).

Furthermore, cognitive strategies of summarizing have a direct relationship with the students' learning. Through the implication of cognitive strategies, initially students are actively engaged in the process of knowledge acquisition. After that, they comprehend the target text of summarizing. Finally, they summarize the academic texts successfully.

In fact, all the activities in which the learners are involved when implementing the strategies are considered as cognitive strategies. For instance, reading, copying, selecting and condensing, organizing the main ideas and writing the summary draft are all taken to account as cognitive strategies in summary writing. Without cognitive strategies in summarizing, students are unable to process the information, transfer them to the dynamic and stable knowledge structure and summarize academic texts effectively (Jansen, Lakens & IJsselsteijn, 2017; Marzan, 1988).

In conclusion, since students are unable to summarize academic texts effectively without metacognitive and cognitive strategies (as mentioned before), this study goes beyond the strategies per se. In other words, the current research identifies not only the ESL undergraduates' metacognitive and cognitive strategies, but also

learners' shifts between the metacognitive and cognitive strategies during summarizing the expository text.

Summary writing problems in the Malaysian context. Summary writing was tested in the SPM English Language examination in 1995 in Malaysia (Report of the Committee for the Planning and Coordinating of English Programs in Schools, 1992, cited in Tahir, 1998). The examination format for this English Language paper was modeled on the 1119 GCE O- Level English paper produced by the University of Cambridge Examinations Syndicate and was an interim paper while the new (1997) SPM English Language paper was being prepared.

In the 1995 examination format, students were assigned to write a short summary of about sixty words, as part of the reading comprehension component in Section A of Paper 2. The emphasis of the writing component in the 1995 and 1996 examinations was still on guided essays. With the revision of the SPM English Language examination formats, the examination focus had shifted from testing communicative competence to testing writing skills. The change to the examination format was made as a result of the Ministry of Education decision to improve the standard of English among students (Report of the Committee for the Planning and Coordinating of English Programs in Schools, 1992, cited in Tahir, 1998).

However, based on the analysis of the MUET 2000 results writing components, only 0.03 % of the total candidates (44, 355) obtained band 6 (the highest band) which means "very good user" while 62. 32 % of the candidates obtained band 1 (the lowest band) which means "extremely limited user" in Paper 800/4: Writing (Ramadass, 2010). This ascertains that there is a serious problem in the teaching and learning of writing skills in Malaysian context.

Moreover, most students were not successful in writing effective summaries and instead copied the original texts. Therefore, the summary-writing test affected the overall performance of the students' MUET marks and the students' performances were low for the Writing Paper in MUET. As a consequence, the summary-writing has unfortunately been removed from the MUET Writing Component in 2008 (Ashrafzade and Nimehchisalem, 2015; Ramadass, 2010).

On the other hand, lack of summarization skills could also be a factor in the low standard of literacy among students in higher education centers in Malaysia. Therefore, the students in tertiary level use a lot of plagiarism for their assignments and research projects. According to recent statistics, 50% of the students' assignments' content in the universities are taken from other materials. Furthermore, some of the students' works are even worse; Turnitin's analysis shows that some Malaysian students in universities plagiarize up to 90% indicating that most of their writing content is virtually taken from other sources (Ramlan, 2015). Similarly, Moghaddam (2006) in her study revealed that Malaysian students in tertiary levels are very weak in paraphrasing skill which is counted as one of the summarizing processes.

Furthermore, most of Malaysian students at universities are unable to summarize and identify the gist from the reading materials in classes (Ramadass, 2010). As a consequence, the evidence raises several questions regarding what strategies of summary-writing were taught to Malaysian students and what strategies students employ or fail to employ in their summary drafts.

Despite the fact that learning summary-writing skills are necessary for Malaysian tertiary students to avoid from plagiarism, only a few studies (as mentioned before) have been reported on summarizing strategies. Therefore, no

study has investigated the metacognitive and cognitive strategies of summarizing the expository text among Malaysian undergraduates. Likewise, there is no research on the shifts between metacognitive and cognitive strategies in summarizing expository texts by Malaysian undergraduates.

Statement of the Problem

Based on the previous studies in Malaysia (Ashrafzade and Nimehchisalem, 2015; Hashim, 2003; Kaur, 1997; Moghaddam, 2006; Ramadass, 2010) teachers have no clear instructions on summary writing and students are unable to differentiate main ideas from supporting details in writing their summaries. Therefore, tertiary students have serious problems in the selection and condensation processes of summarizing skills. Although, previous studies on summary writing in Malaysian contexts investigated some of the students' strategies in writing summaries in different levels, research on summary writing is required to show clearly the strategies and the problems of undergraduates in summarizing the expository text in Malaysia. In fact, Malaysian studies focused on different aspects of summarizing in dissimilar levels, such as summary writing strategies among secondary school students (Kaur 1997; Hashim, 2003; Ramadass, 2010), comparing summary writing strategies between native and non-native English undergraduates (Moghaddam, 2006) and collaborative summary writing among college students (Lina & Maarof, 2013). However, none of these studies focused on both metacognitive and cognitive strategies of summarizing expository texts at tertiary level.

In general, researchers in the first language summarization, as mentioned earlier, examined different aspects of summarization such as summary writing processes, rules and strategies, cognitive strategies of summarization, text

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comprehension and production summarization behaviors, summarization skills and summary writing instruction and summarization of expository text. As a matter of fact, the number of L2 studies on summary writing is smaller than that for L1 studies (Berthold, Nuckles & Renkl, 2007; Esmaeili, 2002; Gao, 2013; Grabe, 2001a, 2003; Hamed et al. 2014; Holmes & Ramos, 1993; Kim, 2001; Keck, 2014; Kirkland & Saunders, 1991; Rivard, 2001; Roelle, Nowitzki & Berthold, 2017; Sarig, 1993; Yang & Shi, 2003). Among these studies, Sarig (1993) investigated the metacognitive and cognitive strategies of high proficiency EFL undergraduates' summary writing in her model, namely, "the recursive-corrective processes of composing a study-summary" using the general framework of her previous model, the "recursive-interactive text processing model" (1991). Actually, Sarig's text processing model was developed in her doctoral study in 1985 under the supervision of Cohen. In her doctoral study, she conducted an in-depth study of ten EFL high-school readers with the native language of Hebrew, focusing on reading comprehension strategies. Later, Cohen (1986) adopted Sarig's taxonomy for reading comprehension to develop "mutualistic measures" in reading comprehension strategies. And finally, Sarig in 1993, used her own model, the recursive-interactive text processing model (1991), and developed a new model in summarizing. Similarly, Yang and Shi (2003) conducted a study focusing on the strategies and metacognitive strategies of summarizing of six MBA students, but she did not address the full range of strategies that Sarig (1993) explored. For instance, Yang and Shi (2003) only looked at general strategies namely planning, composing, editing and commenting while Sarig (1993) identified several sub-categories within the main strategies of planning, operating and assessing.

Actually, Sarig's study is important as her research represents a development from other work. Her taxonomy also proved useful to other researchers (Zupnik, 1985). She adopted a holistic approach in summary writing while other researchers (Connor & Kramer, 1995; Connor & McCagg, 1983; Esmaeili, 2002; Grabe, 2001a, 2001b, 2003; Holmes & Ramos, 1993; Kim, 2001; Kirkland & Saunders, 1991; Rivard, 2001; Yang & Shi, 2003) focused on individual strategies.

Although Sarig (1993) focused on summarization at the college level, the texts she used were non-academic and she also did not differentiate clearly between the metacognitive and cognitive strategies as she refers to metacognitive strategies as "monitoring strategies". Moreover, Sarig (1993) just identified the strategies and she did not investigate the learners' shifts between metacognitive and cognitive strategies.

On the other hand, expository text is one of the common texts used in the higher education context and it is very challenging and difficult for ESL undergraduates to write an expository text in English (Juilinag, 2014; Yang, 2010, cited in Meisuo, 2000; Yasuda 2015). Likewise, summarizing of expository text also demands the student' knowledge of the expository text structure (Taylor & Beach, 1984; Yasuda 2015). Therefore, the researcher chose the expository text since it is the most common text used in the university and also, it is very challenging for the students to summarize. The question is whether Sarig's findings apply to the expository text as well and if her findings would apply to other cases and what possible shifts between the metacognitive and cognitive strategies exist while undergraduates summarize the expository text. In fact, being aware of metacognitive and cognitive strategies in summarizing not only will help undergraduates to paraphrase expository texts but also prevent plagiarism. Besides, this study is

beneficial for the lecturers as well to provide an opportunity for undergraduates to practice metacognitive and cognitive strategies of summarizing expository texts in the class to improve their writing skills and avoid plagiarism.

Although different studies investigated the metacognitive and cognitive strategies of either reading or writing separately (Bakry & Alsamadani 2014; Baghbadorani & Roohani, 2014; Maasum & Maarof, 2012; Nosratinia & Adibifar, 2014; Panahandeh & Esfandiari Asl, 2014; Sen, 2009; Sevgi, 2016 Zhussupova & Kazbekova, 2016), the literature on metacognitive and cognitive strategies simultaneously in both reading and writing is so scarce and, to the best knowledge of the researcher, no study has addressed the shifts and interactions between the metacognitive and cognitive strategies in both reading and writing. The complexity of these quadruple interactions made this study unique and it highlighted the gap of the current research. Therefore, according to the available literature, the researcher adopted Sarig's strategies since it was the closest study for the purpose of the current research. There were two studies on metacognitive and cognitive strategies which were focused on the effects of these strategies (Roelle et al. 2017) and the result of changing the sequence of them (Nuckles & Renkl, 2007) but not on the interactions between the metacognitive and cognitive strategies. Thus, the researcher used Sarig's as a guideline to look deeply to the interactions between metacognitive and cognitive strategies of reading and writing skills. Therefore, this study is identical in its own since it clearly showed the interactions between the metacognitive and cognitive strategies   uniquely   in   reading   and   writing.

Thus, based on the abovementioned concerns raised and the importance of ESL summary writing in academic contexts (Jones, Pierce, & Hunter, 1988; Kirkland & Saunders, 1991) this study attempts to follow up Sarig's work by specifically

adopting Sarig's metacognitive and cognitive strategies since this is the only study, to the best of the researcher's knowledge, which has worked on both metacognitive and cognitive strategies of summarization in the field of second language. Therefore, the researcher used Sarig's strategies to analyze the data and identify metacognitive and cognitive strategies of expository text in this study and also to investigate the undergraduates' shifts between these metacognitive and cognitive strategies.

Objectives of the Study

The objective of this study is to investigate the undergraduates' shifts between the metacognitive and cognitive strategies in summarizing expository text. This study also identifies the metacognitive and cognitive strategies of summary writing by ESL undergraduates using expository text in the Malaysian context. It is important to highlight that the term "shift" was chosen to show not only the interactions between the strategies of each concept of metacognitive and cognitive concepts per se, but also the movement and transition of each strategy within three concepts of metacognitive and cognitive which are planning, operating and assessing. Therefore, the word "shift" could be the best choice for the description of moves in the current study.

Research Questions

This study attempts to investigate the processes that ESL learners use during summarization. The research questions of the current study were organized based on the "top-down" or wholistic aspect. It means that the researcher, firstly, looked at the metacognitive strategies, the planning part of reading and writing. Secondly, she showed the actions after planning, which was the reading and writing individually and finally, the interactions between them. Therefore, the study designed to start

from a very wholistic picture to the very detailed view of the metacognitive cognitive strategies and shifts between them.

The following questions are considered in this research:

1. How do the ESL undergraduates shift between the metacognitive and cognitive strategies when they summarize the expository text?

2. What are the metacognitive strategies involved when ESL undergraduates summarize the expository text?

3. What are the cognitive strategies involved when ESL undergraduates summarize the expository text?

Table 1.1 shows the summary of problem statement, research objectives and research questions of the current study.

Significance of the Study

Whereas the acquisition of the skills in summarization is radically essential for students in the upper secondary classes and advanced students in both universities and high schools (Johns & Mayes, 1990), less attention is given to this area. The review of literature in summary writing asserts the difficulty of summarization as a skill (Johns & Mayes, 1990; Kirkland & Saunders, 1991). To write a summary, students have to engage in the complex processes and multiple tasks of comprehension, selection of the main idea and to rewrite the ideas in new prose (Kirkland & Sunders, 1991; Susar & Akkaya,2009).

The most important significance in the study is providing the complex processing of the ESL undergraduates' shifts between the metacognitive and cognitive strategies when summarizing the expository text. This study definitely filled up a huge gap in the literature of summarizing expository text. To elaborate,

Table 1.1

Problem Statement, Research Objectives and Research Questions of the
Proposed Study

Problem Statement	Research Objectives	Research Questions
Because summary writing is a vital part of academic examination and it can be practiced in all of educational activities as a study aid for the need of the students in different ways, ESL students are confronted with complexity of summarizing expository text during their education.	To investigate the undergraduates' shift between the metacognitive and cognitive strategies when they summarize the expository text.	1. How do the ESL undergraduates shift between the metacognitive and cognitive strategies when they summarize the expository text?
Although other researchers (Nuckles & Renkl, 2007; Roelle et al. 2017; Sarig,1993) worked on metacognitive and cognitive strategies and/or summary writing, they did not focus on the expository text In addition, some did not clearly differentiate between metacognitive and cognitive strategies and finally they did not investigate the undergraduates' shifts between metacognitive and cognitive strategies	To investigate the metacognitive strategies used by ESL undergraduates in summary writing of expository text in the Malaysian context.	2. What are the metacognitive strategies involved when ESL undergraduates summarize the expository text?
	To investigate the cognitive strategies used by ESL undergraduates in summary writing of expository text in the Malaysian context.	3. What are the cognitive strategies involved when ESL undergraduates summarize the expository text?

numerous studies have focused on the metacognitive and cognitive strategies, of

reading and writing separately in a single aspect (Bakry & Alsamadani 2014;

Berthold et al. 2007; Maasum & Maarof, 2012; Nosratinia & Adibifar, 2014;

Panahandeh & Esfandiari Asl 2014; Roelle et al. 2017; Senay Sen, 2009; Sevgi,2016

Zhussupova & Kazbekova, 2016). However, no work has been reported yet on the learners' mental interactions between the metacognitive and cognitive strategies simultaneously both on reading and writing skills. In fact, the current study can be considered as the pioneer in this area, according to the recent literature, which lacks any research on the interactions between metacognitive and cognitive strategies on redaing and writing at the same time. Moreover, this study adds the new aspect to the theories of the summarizing literature. In other words, the current summarizing model in this study, namely recursive-interactive summarizing processing model, can be the first model in summarizing the expository text showing the learners' detailed interactions and shifts between the metacognitive and cognitive strategies. Furthermore, the metacognitive and cognitive strategies of the expository text can also be beneficial to the body of knowledge as there has not been any work on summarizing yet showing clearly he differences between the metacognitive and cognitive strategies of summarizing focused both on reading and writing part of summarizing and the processes and steps which learners take in order to summarize an expository text properly.

On the other hand, this study can help the students to be aware of their operations during their summarizing and as a result , to summarize the expository texts in effective ways. Therefore, the interactions between metacognitive and cognitive strategies not only theoretically, but also practically will enhance the educators' summarizing skills in summary writing. In other words, students will comprehend and differentiate the concept and their shifts between each other in order to plan, compose, and edit their drafts. In fact, in previous studies, the relationship between metacognitive and cognitive strategies is not focused specifically on expository texts which most of learners are exposed to them almost every day. This feature highlights

the significance of the current study as well. In addition, lecturers could get a clear picture in teaching the summarizing strategies and assist students to improve their summarizing skills.

Last but not least, this study can also be useful as a guideline for decision makers in the education system to include in the academic subjects for students and to revise the marking schemes of students' summarization based on the findings of this study in specific, the metacognitive and cognitive strategies of summarizing the expository text.

Definition of Terms

Summary writing. Summary writing is defined as s short restatement of a work's main points, presenting in a condensed version of information in one's own words. "A summary is a condensed version, in your own words, of the writing of someone else, a condensation that produces the thought, emphasis, and tone of the original. It abstracts all the significant facts of the original-overall thesis, main points, and important supporting details-but, unlike a paraphrase, it omits and/or condenses amplifications such as descriptive details…" (McAnulty, 1981, p. 50).

Expository text. Expository text is a text which is written to inform, explain, describe, present information or to persuade. Expository text is subject-oriented and contains facts and information which is connected logically (Tonjes, Wolpow, & Zintz, 1999). Expository texts include different genres such as argumentative, descriptive, cause and effect, compare and contrast and etc. In the current study, the standard compare-contrast material was assigned for the undergraduates to summarize.

Cognitive strategies. Cognitive strategies in this study are defined as the performance of some composite cognitive activity and behavior by ESL undergraduates during summarizing of the expository text. According to Sarig's Summary Process Model (1993), summary writing consists of operating strategies which refers to cognitive strategies in this study.

Metacognitive strategies. Metacognitive strategies are those related to self-management or self-regulation while one is reading a written text and writing a summary. According to Sarig's Summary Process Model (1993), summary writing consists of two phases of metacognitive strategies: planning and assessing.

Chapter 2 Review of Literature

Introduction

The review is organized according to the subject matter most relevant to the proposed study. The purpose of this chapter is to review research and the theory related to the research questions which motivated this study. In order to do this, the chapter is organized into three main sections. The first section presents the reading-writing connection, metacognition and cognition in second language reading and writing. This is followed by theoretical framework of the current study. Then, an overview of what summary writing is, the types of summary, its processes and factors that influence the summarization process is given. This is followed by a discussion and empirical evidence concerning the complexity of expository text and the different performance of L1 and L2 speakers in summarization.

Several studies in the field of first and second language have been conducted on summarization with different lenses to the present time. The scrutiny of research on the ESL learners' shifts between the metacognitive and cognitive strategies is obvious in the literature of summarization in the second language because there are a few studies that specifically focus on the metacognitive and cognitive strategies of summarizing expository text. In this regard, this study attempted to identify the ESL learners' shifts between the metacognitive and cognitive strategies and identify the metacognitive and cognitive strategies as well while ESL undergraduates summarize the expository text. The literature review in this chapter is basically divided into two parts. The first part includes considerations of the conceptual issues which help the researcher to develop the theoretical framework of the current study and the second part consists of the literature review of findings on summarization.

Conceptual Issues and Theoretical Framework

In this part, the reading-writing connection of summarization is explained as the initial concept. After that, metacognitive and cognitive strategies of summarizing and two models of summarizing, which assist the researcher in developing the theoretical framework of this study, are discussed. Finally, the theoretical framework of the present study is presented.

Summary as reading-writing connection. Summary is a reading-writing connection. Johnson (1983) defined the summary as a brief statement that not only represents the reduction of information accessible to a subject but also reflects the gist (central ideas or essence) of the discourse. A summary writing task is an instance of academic behavior where two distinct skills, reading and writing, are intimately interrelated (Hidi & Anderson, 1986).

The researchers (Gao, 2013; Ghahari & Ahmadinejad, 2016; Kintsch, 1990; Yu, 2007 and 2009) indicated that the purpose of summarizing the text is reading comprehension. In many developmental studies of reading, a summarization task was chosen to assess the underlying comprehension processes. In other words, summarization has a natural appeal to the measurement of reading comprehension (Cohen, 1994, p. 174), as the essential communicative activity (Brown & Smiley, 1978). On the other hand, writing a summary is a very special writing activity in that the quality of the production depends not only on one's ability to write, but also on the extent to which the original material to be summarized is comprehended and can be related to the learners' reading comprehension during summarization.

Correspondingly, Kirkland and Saunders (1991) and other scholars (Jansen et al. 2017; Richards et al. 2016) argued that summary writing is an assignment which connects reading and writing skills involving the complex operation of cognition,

through the summarization. In other words, complex cognitive strategies are involved during the summarization process through several editing tasks such as evaluation, selection, reduction and production of the summary.

Thus, it can be concluded that summary writing is the connection of reading and writing strategies and these skills are inseparable from each other in summary writing.

Metacognitive strategies in second language reading and writing. Meta-cognitive strategies play significant roles in second language writing. Metacognitive awareness can help ESL students to develop their skills effectively, especially in reading and writing (Ahangari, Hejazi & Razmjou, 2014; Ghahari & Ahmadinejad, 2016; Limpo & Alves, 2013; Maasumm & Maarof, 2012; Schleinschok, Elitel & Scheiter, 2017). Furthermore, Mokhtari and Richard (2002) found that second language learners are unable to use their cognitive strategies in reading and writing without metacognitive strategies. In fact, metacognitive strategies assist ESL students not only to monitor their learning processes, but also to choose different strategies based on the task requirements (Karimi & Dowlatabadi, 2014). In addition, researchers highlighted that lack of appropriate metacognitive reading and writing strategies causes ESL students to fail in planning reading comprehension and monitoring writing processes (Ahmadi1, Ismail1 & Abdullah, 2013; Knospe, 2017Negretti, 2012; Negretti, & Kuteeva, 2011). Finally, metacognition is very important in the L2 academic context because ESL learners are able to recognize the specific genre of the text in L2 reading and writing. To conclude, metacognitive strategies are vital for L2 learners in order to understand how and when to use reading and writing strategies in academic contexts (Roelle et al. 2017).

Metacognitive skills and metacognitive strategies. According to Afflerbach, Pearson and Paris (2008), skills and strategies are completely different from each other. However, both can enhance students' abilities to transfer their knowledge and understand across the context (Redwine, Leggette, & Prather, 2017). In specific, reading strategies are readers' attempt in order to comprehend the text consciously toward to the specific goals. Therefore, readers modify and construct the meaning from the text based on their awareness and "goal-directedness". On the other hand, reading skills are unconscious actions that make readers to understand and decode the text with speed, efficiency and fluency. In specific, if readers read the text without any awareness and goal orientation, they just act as a habit of reading while conscious readers read the text under deliberate control. Therefore, they can decide about their actions during reading and decode the context. It is important to mention that both reading strategies and skills complete each other and even over a period, implication of appropriate reading strategies may change them to reading skills since they become automatic. Therefore, the metacognitive strategies of reading in the current study are reading strategies that learners consciously use them in or to decode the text.

Metacognition in writing. There are three main concepts, which are necessary to be discussed in the section: metacognitive knowledge, metacognitive experience and metacognitive strategies. Flavell (1978, 1979, and 1985) refers to metacognition as the knowledge about the universality of humans as cognitive processors and with this knowledge one is able to manipulate or orchestrate one's cognitive resources and strategies to meet the demand of the immediate cognitive task or goal. In other words Flavell (1985, p. 105; 1992, p. 4) maintains that metacognition comprises two key components; metacognitive knowledge and

metacognitive experience. Although some scholars believe that these two key components are very close to each other, others highlighted that they are completey separate components. For instance, Devine (1993) argued that the basis of metacognitive experience is the metacognitive knowledge. However, Flavell (1979) Quiles, Prouteau, and Verdoux (2015) indicated that metacognitive knowledge refers to the knowledge about the factors that are involved in different ways to affect the outcome of cognitive system. There are three main categories for metacognitive knowledge: person, task and strategy. On the other hand, metacognitive knowledge is a kind of momentary feeling of understanding of solving a problem. Furthermore, Wenden (1998) mentioned metacognitive knowledge enhances the quality of learner's cognitive involvement. Metacognitive knowledge is more flexible for reflection and modification (Vandergrift & Goh, 2012). Therefore, Flavell's model opened a new window to the concepts of metacognitive knowledge, metacognitive experience, the strategy use and orchestration of strategies based on learning goals.

Baker and Brown (1984), Quiles, Prouteau and Verdoux (2015) and Roelle et al. (2017), on the other hand, conceptualize metacognition as the knowledge about cognition and regulation of cognition. Metacognition has typically been defined as "cognition about cognition," or, to put it another way, "thinking about thinking." From the outset, however, researchers such as Flavell have recognized that the phenomenon is too complex to be simply defined. Indeed, metacognition involves a host of subprocesses for planning, monitoring and regulating a host of cognitive processes which may occur at many levels of awareness. It also includes non-cognitive experiences such as interest, motivation and self-efficacy. In fact, overly-simplistic definitions may impede our understanding of metacognition, since metacognitive processes often involve much more than "thinking" about thinking

and sometimes do not involve the conscious act implied by the word "thinking" at all. Navigating the extensive and disparate research on metacognition can be confusing, due partially to inconsistent use of terms for describing certain metacognitive phenomena across fields of study. For instance, readers need to be aware that "metacognition" can be used in different contexts to refer to either or both the metacognitive knowledge (declarative or procedural) an individual possesses *and* the metacognitive planning, monitoring and regulatory actions which guide first-order cognition.

On the hand, metacognitive knowledge and metacognitive strategies are very important in this concept. Flavell (1979) highlighted that metacognitive knowledge and metacognitive strategies are different in their content and function but not in their form and quantity. Similarly, Ellis, Denton and Bond (2014), Wenden (1998) and Vandergrift and Goh (2012) indicated that metacognitive knowledge and metacognitive strategies are two distinct concepts. In specific, Metacognitive knowledge can be defined as the specific information that learners can obtain about their learning whereas, metacognitive strategies refer to "general skills through which learners manage, direct, regulate, guide their learning, i.e. planning, monitoring and evaluating" (Wenden, 1998, p.519).

On the other hand, metacognitive experience is described as "awareness", realization, "ahas or…clicks and chunks" (Garner, 1987, p. 19) of realized or expected success or failures in cognitive enterprises. Metacognitive experience realizes and identifies the errors. In fact, the basis of metacognitive experience is the metacognitive knowledge. In addition, Fischer and Mandl (1984) argued further that there is an interaction between metacognitive knowledge and experience with cognitive strategies. Actually, there are always close relationships between the

metacognitive knowledge and experience with metacognitive and cognitive strategies.

According to Flower (1994), metacognition in writing refers to "acts of planning, detecting and diagnosing problems…that let writers monitor and guide cognition" (p. 226). She subsequently separates metacognition in writing into two broad categories, awareness and control, each with subprocesses intended to address a "dilemma." Under "awareness," Flower (1994) includes problem detection, problem elaboration and causal attribution. She further explained that "Control" includes 1) the juxtaposition and evaluation of alternatives; 2) an "action plan" for enacting an alternative (simply called a strategy); and 3) evaluation of "the success of a strategy or [specification of] the conditions under which it might be useful" (p. 259). Predicated upon her own research in composition and supported by findings outside of composition, Flower posits that much metacognition of which writers are aware appears to be "triggered" by a problem encountered while using a cognitive or rhetorical strategy. That is, metacognitive subprocesses of planning, monitoring and/or regulation which either normally occur tacitly or have become automated in experienced writers rise to the threshold of awareness because the writer faces a strategic obstacle requiring meta-level awareness and control of cognitive processes for resolution.

Although Favell's metacognitive knowledge, experience and the strategy use have been applied to some research (Roelle et al. 2017; Sevgi, 2016; Wenden, 1998: Vandergrift and Goh, 2012; Zhussupova & Kazbekova, 2016), this study is focused more on the interactions between metacognitive and cognitive strategies of summarizing expository texts and less on knowledge and experience and strategy use on Flavell's model. However, when it was necessary, the researcher compared some

of the strategic use of metacognitive knowledge to the participants' performances according to the scope of this study which are discussed in Chapter 4 through analysis of some excerpts (pp.178-194).

    Metacognitive skills in summary writing. According to Shore, Rejskind & Kanevsky (2003), the skills to do something with the combination of metacognitive knowledge and information from the situation at hand are called "metacognitive skills" (pp. 185-186). Some researchers (Abrams & Byrd, 2016; Brown, Day, & Jones, 1983; Cumming et al. 2016; Keck, 2014; Kirkland & Saunders, 1991; Limpo & Alves, 2013; McDonough, Crawford & Vleeschauwer, 2014) highlighted the significant role of metacognitive skills in summary writing. Brown et al. (1983) found that adult university students are unable to utilize appropriate planning if they are unaware of metacognitive skills. In other words, in all the process of summary writing, metacognition awareness facilitates the learner to write summaries and it can be seen as part of the normal reading-to-writing strategy for summarizing. It means that the metacognitive awareness is actively involved in the metacognitive strategies which the learners operate during summary writing. In other words, metacognitive strategies are mental operations, which direct the cognitive functions of a person and support a learning conceptualization (Abrams & Byrd, 2016; Lin, Maarof, 2013; Mevarecha & Kapa, 1996; Nastasi, Clements, & Battisa, 1990; Rahimirad, 2014; Wang & Treffers-Daller, 2017). Using metacognitive strategies supports problem solvers during the solution process and improves their ability to achieve the goal (Fortunato, Hecht, Tittle, & Alvarez, 1991). According to Ellis et al. (2014), Flower and Hayes (1981), Hayes (1996) and Hayes and Flower (1980), monitoring the writing process well means having the ability to think about thinking and to continuously coordinate and examine the mental manipulation in sustaining and

shifting the focus of attention among sub-strategies in order to ensure progress and quality. This process is referred to as executive control. As writers compose, they monitor their current process and progress. The monitor functions as a writing strategy which determines when the writer moves from one process to the next (Flower & Hayes, 1981, p. 374).

According to Sarig's model, summary writing consists of two phases of metacognitive strategies which are planning, and assessing, as explained in detail in the previous section of Sarig's summary process model (1993).

Cognitive strategies in second language reading and writing. Cognitive strategies, on the other hand, are very necessary in ESL academic contexts. In specific, ESL learners can only perform a task when they use their cognitive skills (Ellis et al. 2014; Nückles, Hubner, & Renkl, 2009; Roelle et al. 2017; Schraw, 1998). Problems appeared when ESL learners try to translate words in different tasks and comprehend the reading text. Similarly, ESL students have a lot of challenges when they try to write appropriate words or sentences. Actually, L2 learners should consider both aspects of task requirements and language proficiency. In other words, cognitive strategies assist ESL learners to understand texts in reading and write essays accurately in writing. The complex processes of cognitive strategies are not inevitable in the academic context; however, different studies provided different instructions and strategies to help ESL learners in academic reading and writing, especially ESL undergraduate students (Nückles et al., 2009). Moreover, there are different cognitive strategies in ESL reading such as understanding different words, taking notes, summarizing specific points, paraphrasing or rephrasing, translating specific words, analyzing, texts and   predicting the content of content (Frear & Bitchener, 2015; Keck, 2014; Sadeghi 2012; Singhal, Yang, & Shi, 2003). Similarly,

in writing, cognitive strategies make learners think and solve problems. For instance, ESL learners have several problems in writing thesis statements in their writing. Furthermore, most ESL learners are unable to write coherent sentences in their essays, especially novice writers (Keck, 2014). Finally, cognitive strategies are useful for ESL learners to implement different strategies in order to write effectively. In conclusion, cognitive strategies are the main criteria in the application of appropriate strategies in any reading and writing academic tasks. Without clear cognitive strategies, ESL readers and writers struggle with task requirements and consequently, they fail to do the task properly.

Cognition in writing. Cognition is concerned with the nature of knowledge and with the structures and processes by which it is acquired. Perhaps the most obvious contribution of the cognitive-processing concept is the study of writing as process ─close observations of writers in the act of composing making the choices and decisions that move text forward (Kennedy, 1985). In English composition studies, the Flower and Hayes model (1981) and Bereiter and Scardamalia model (1987) are the significant ones because they directly influence ESL writing research. According to Flower and Hayes (1981), the writing process consists of three main processes and a number of subprocesses. The Flower and Hayes model shows that good writers employ three major processes to accomplish their goals, namely, "planning, translating and reviewing", as well as the cognitive subprocesses of these elements. These are applied recursively and interactively.

Cognitive skills in summary writing. There are two cognitive skills particularly important and problematic areas in summary writing: superordination and transformation and relevant aspects of text processing. A look at the critical thinking skills used in summarizing underscores the sophistication required to

produce effective academic summaries. It seems that critical thinking is viewed as the use of one or more cognitive operations to serve a particular problem-solving purpose. Correspondingly, Bloom (1956), Holten (1988), Jansen et al. (2017) and Keck (2014) and interpret the entire summarizing task, and each part, as a problem-solving activity which entails the ability to identify the problem clearly, find or generate alternative solutions, test alternative solutions, and select the best from among them, all occurring recursively.

Comprehension and application play a significant role in cognitive skills in summary writing. Comprehension, the foundation of summary writing, involves analysis and synthesis. An essential element of comprehension in a summarizing context is the cognitive operation superordination, constructing a more general conceptual framework from analysis, and synthesis of specific information. Application, the ability to apply comprehended material to the task at hand, relates to the summarizing context as transformation or reconceptualization.

A commonly identified problem area in summary writing is superordination (Anderson & Hidi, 1988; Brown & Day, 1983; Jansen et al. 2017). Superordination, or what Ausubel (1968) terms "subsumption" (p. 100) occurs at very specific levels of text comprehension when the student constructs general categories to include specific details, but it also occurs when achieving the macro-level conceptual framework of a text. Thus, it plays a key role in achieving the purposes of writing a study summary by providing the conceptual framework that facilitates comprehension and memory (Brown et al., 1981; Kintch & van Dijk, 1978). When one is summarizing for another reader, superordination further serves as a foundation for transformation, which provides the same sort of conceptual framework for the reader.

Transformation has also been identified as a problem area in summarizing (Sarig, 1993). In this context, it is a cognitive operation, or series of cognitive operations, performed in converting source input into text. The product of transformation is an explicit, reader-based expression of the macro-level conceptual framework of a source text. Johns (1985), Garner (1985), Hidi and Anderson (1986), and others (Ahangari et al. 2014; Panahandeha & Esfandiari Asl, 2014; Sung, Liao, Chang, Chen & Chang, 2016) have noted failure of younger or less prepared L1 students to superordinate. These students are less developed cognitively, at least in terms of this skill. The same feature appears in L2 summaries, and may be attributed to insufficient development of this cognitive skill and a bottom-up text processing strategy.

According to Esnawy (2016), Rumelhart (1984) and Wichadee (2014), as mentioned earlier in this chapter, the reading process involves both top-down and bottom-up text processing. As the words and phrases help the reader construct an interpretation of the text from the bottom up, that interpretation assists in constructing a more global comprehension, which in turn helps the student interpret later words and phrases in a top-down manner. Superordination is an important cognitive operation in constructing this more global understanding and thus serves as a key to top-down processing. Looking at the students' work shows that many rely on a bottom-up approach to reading comprehension, preventing them from getting "the big picture" in planning and writing the summary, and potentially resulting in plagiarism and/or lack of cohesion in the final product.

Rumelhart (1984) also stated that it is easy to speculate on the causes of an overreliance on bottom-up processing, and more research is clearly needed in this area. Likewise, students with weaker L2 proficiency demonstrate a greater tendency

to process text bottom-up. Perhaps, weakness in other internal constraints will manifest itself in bottom-up processing. And in those cultures where students have been trained to memorize details (de-emphasizing overall comprehension), they have been trained to process bottom-up. Perhaps students in fields of study where they must focus on details have been trained in an academic culture that values bottom-up processing. At the university level, teaching summarizing skills may be the most appropriate context for training students both to super-ordinate and to adopt top-down processing. Teachers and researchers can do this by modeling thought processes aloud, providing specific training in both areas, and providing sample written summaries of familiar material. The scholars must also provide materials and methods that trigger superordination and top-down processing. Without these skills, students cannot be expected to transform material effectively (Rumelhart, 1984).

According to Sarig (1993), summary writing consists of cognitive strategies, namely operating strategies which are explained in detail in Sarig's recursive-corrective summary processes model (refer to p. 25).

Theoretical Framework of the Study

Models of summarizing. The researcher presented two models of summarizing which help her to develop the theoretical framework of the study and analyze the data. First, the researcher used the Kintsch and van Dijk model (1978) in order to describe different processes and steps of summarizing by ESL undergraduates while they are summarizing the expository text.

Second, Sarig's recursive-corrective summary processes model (1993) was used in this study to identify the metacognitive and cognitive strategies which ESL undergraduates used in summarizing the expository text and also the undergraduates'

shifts between these strategies. Therefore, the two models helped the researcher to analyze the data of the current study.

   Kintsch and van Dijk's model. According to the process of text comprehension model proposed by van Dijk and Kintsch (1977), the cognitive processes of macrorules are used by the summarizer in reading the target text, and these determine the information that will be included in a summary. The summarizer uses these cognitive strategies--deletions, generalization, and integration--to operate on the set of "propositions" that makes up the text and that produces the macrostructure. These macrorules serve as the input for the write-up of the summary. Clearly, reading comprehension, reading for the main ideas, and the actual write-up of a summary are interconnected in the summary writing process. It is therefore logical to assume that comprehension would be a prerequisite for summarization. Reading for the gist of information--and a successful summarization process--would be a prerequisite for the process of summary writing. Similarly, in the absence of understanding of the global meaning of a source text, the gist of the information cannot be extracted (Taylor, 1984a; 1984b; Winograd, 1984, 1982). It also stands to reason that the more successful the meaning-making process the better the readers understand the source text, the better perception they have of the global meaning and the better they are able to prioritize the information. Thus, text comprehension is a crucial phase of summarization without which readers cannot proceed to draw the distinction between levels of importance and the main point in summarization (Winograd, 1984, 1982). It is worthwhile to mention that the model of Kintsch and van Dijk (1978) in summary writing is highly significant in the body of literature. However, the researcher could not identify the metacognitive and cognitive strategies if she focused on this model only since it is solely on summary writing process.

Sarig's recursive-corrective summary processes model. Sarig (1993) conducted a case-study on the writing of study summaries. Her account describes what her subject, Amram, realized in his L1 and L2 summary writing process. According to Sarig's model, summary writing as a reader-based summary involves conceptual, textual, linguistic and strategic processes that occur within each of the phases of metacognitive and cognitive strategies (Figure 2.1). The metacognitive strategies are planning, and assessing strategies and the cognitive strategies are operating strategies. The strategies are not linear, but rather highly interactive and recursive. The initial step is planning. While planning, learners set goals and select strategies. Planning occurs at all times even while assessing and operating. The planning system monitors planning products and is carried out by the operating system.
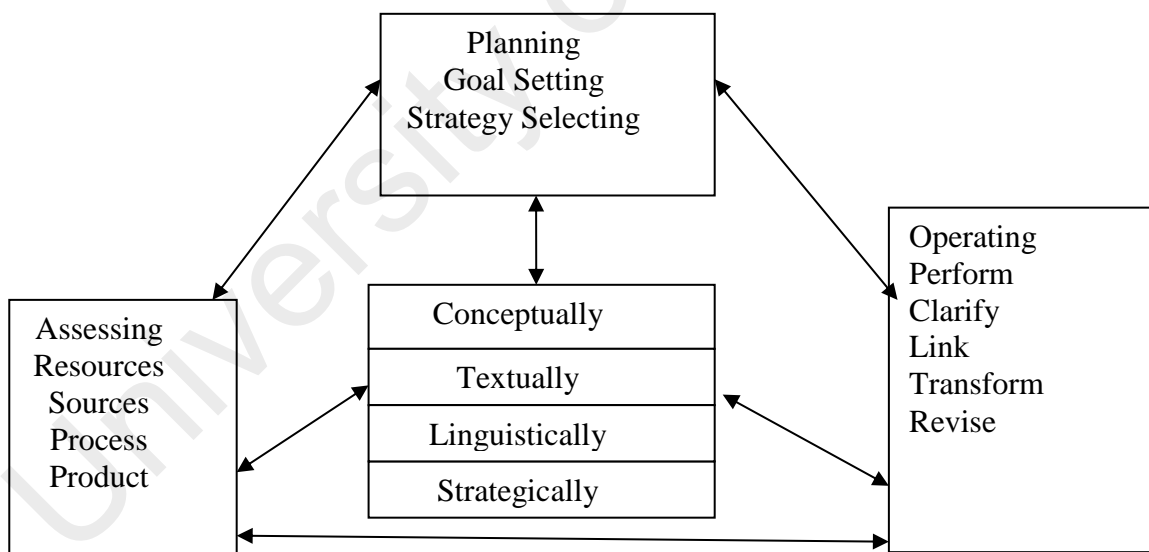
Figure 2.1. Sarig's Recursive-Corrective Summary Processes Model (1993)

Then it will be continued to assessing which evaluates content, linguistic, textual, and strategic resources, as well as sources, processes and products. The role of assessing is to detect and diagnose errors in the resources and sources the learners

use, in the processes they undergo, and in the products they create. When errors are detected and diagnosed, learners return to the planning system, which will produce revised goals and strategies, and then to the operating system, which will carry out the plans. If no errors are detected, the assessing system turns to the planning system to plan the next move.

Besides planning and assessing, the operating system also calls on the learner's linguistics, textual and conceptual resources in order to perform the approved plans. It either performs corrective plans related to a former faulty product or produces a new one. Sarig (1993) found that with regard to both source-text and the target-text (intertext), the metacognitive strategies of planning and assessing were the predominant strategies. Planning strategies were the most important strategies with regard to the source-text, and assessing strategies were the most important strategies with regard to the target-text. For instance, about Amram in Sarig's study, two thirds of his effort in activities were related to the source text (i.e., planning assessing, transforming, clarifying and linking), an inadequate achievement. In addition, Amram could not maintain the required balance between reading and writing.

Sarig's findings are in line with studies in summarization that have shown that while deletion and selection operations (Kintsch & van Dijk, 1978) are relatively easy to internalize and activate, the construction role--which requires a higher level of reconceptualization-- is a difficult rule to internalize and activate (Byrd, 1989; Day, 1986; Garner, 1985; Hidi & Anderson, 1986; Hoye, 1988; Johns, 1985; Johnson, 1983).

Rationale for theoretical framework of the study. The theoretical framework of this study (Figure 2.1) is designed based on Sarig's recursive-corrective processes

of composing a study-summary model (1993). Among the summary writing process models, Sarig's recursive summary model is influential in the summary process filed (Baba, 2007). As mentioned earlier, Sarig (1993) developed her summary model based on the strategies of comprehension text processing in an in-depth doctoral study in 1985 and later she developed the recursive-corrective processes of composing in a study on a model for summarizing in 1993. As a matter of fact, Sarig's model was dominant enough in the literature of summarizing as Cohen (1986) adopted Sarig's reading strategies to create mutualistic measures in reading strategies. Therefore, the researcher chose Sarig's recursive-corrective summary processes model (1993) for this study because of two purposes: First, Sarig's model (1993) is a process model emphasizing both the metacognitive and cognitive strategies in summary writing. This was in line with the objectives of this study which focused on the metacognitive and cognitive strategies of summary writing. In other words, Sarig (1993) viewed the recursive process in summary writing as a reader-based summary involving conceptual, textual, linguistic and strategic processes that occur within each of the phases of metacognitive and cognitive strategies namely, planning, operating and assessing. However, she did not mention clearly the terminology of cognitive and metacognitive strategies in her model. In fact, Sarig used "cognitive operations" instead of cognitive strategies, "monitoring strategies" instead of metacognitive strategies in explaining strategies. Therefore, the researcher found out that planning and assessing as self-regulated and self-awareness strategies are the metacognitive strategies and operating strategies is the cognitive strategies in her model based on the explanation of strategies in Sarig's models (1991, 1993). To support the selection of this terminology, other researchers (Barthod, Nuckles & Rnkle, 2007: Maasum & Maarof, 2012; Panahandeh &

Esfandiari Asl, 2014; Nosratinia & Adibifar, 2014) used metacognitive strategies for planning and assessing and cognitive strategies for operating and actual action of students during reading, writing and summarizing.

Secondly, summary writing is a recursive process (Bakry & Alsamadani, 2015; Brown & Smiley, 1978; Cohen, 1994, p. 174; Hidi & Anderson, 1986; Kintsch, 1990; Roelle et al. 2017; Yu, 2007) and the processes model of Sarig, as "recursive" terminology was even included in her model's name, was recursive as well. Therefore, based on the metacognitive and cognitive strategies in summary writing in Sarig's model (1993) as well as recursiveness of these processes and metacognitive activities, the researcher uses Sarig's recursive process in this study. It is worthwhile to mention that Sarig's recursive-corrective process model was only used as the base of data analysis in the current study to show not only the clear strategies of metacognitive and cognitive strategies but also the learners' interactions between theses interactions which the researcher developed a new model based on Sarig's model in the findings of this study.

Literature Review of Findings on Summarizing

As mentioned earlier, the second part of this chapter is related to the literature review of findings on summarizing. Therefore, the literature on summarizing reviews, summary writing, types of summarizing, processes of summarizing and factors of summarizing, L1 and L2 summary writing and finally comparison between L1 and L2 summary writing will be discussed.

Summary writing. Summary is a general picture of the information (Hamed et al. 2014). In other words, summary is seen as "a brief statement that represents condensation of information…, and reflects the gist (central ideas or essence) of the discourse" (Johnson, 1983, cited in Hidi & Anderson, 1986, p. 473). Moreover,

Dennis and Sharp (1974), define it as a "condensed version of the original text without any alterations to the ideas and attitudes of the writer" (p. 4). McAnullty (1981, cited in Johns & Mayes, 1990, p. 253), further stated that the condensed version of summary is not only reproducing the words and the content, but also transferring the "original tone and emphasis" of the writer.

Moreover, Dennis and Sharp (1974) defined summary as a "difficult task" that is a basic, essential human activity throughout life (p. 1). Meaning that summary can be used in different varieties such as the media news, journalist reports, court evidence, company meeting minutes, publication reviews and finally students' assignment for comprehension of their subjects.

According to Hays (1989), summary is "a synthetic strategy" whereby students need to determine the degree of importance of the information included in the text. Similarly, Kamhi-Stein (1993) classified summary as an elaboration strategy for complex learning tasks. Summary writers are not only required to synthesize the content but also, to "create a coherent text that stands for, by substantive criteria, the original text" (Dole, Duffy, Roehler, & Pearson, 1991, p. 244).

Relatively, Weinstein and Mayer (1986) explain that the objective of summarizing is to integrate new information with the students' prior knowledge. Correspondingly, Hock (1986), Spiro and Donely (1998) and Zurina (2003) proposes four main purposes of summarizing. The first purpose is for the writer to separate the main ideas from the minor points. The second purpose is brevity; this is where the summary writer has to convey in as few words as possible the information contained in the text. Since the summary is concerned with stating the ideas of someone else, the third purpose is objectivity. Here the writers' task is to demonstrate their understanding of the text and not to respond to the author's ideas. And finally ,the

fourth purpose is accuracy; in this aspect the writer has to ensure that the information reproduced in the summary is true to the original. Therefore, summary writing is a complex task required in academic classes. To compare summary writing task with other types of writing, it can be mentioned that in the average writing task, students produce writing based on a given topic but in summary writing students generate a shortened and condensed discourse based on information gathered from the original text.

Besides, researchers (Bakry & Alsamadani, 2015; Brown et al., 1983; Brown & Smiley 1978; Hill, 1991; Roelle et al. 2017) highlight the developmental nature of summarizing. That is, older and high educational level students are able to perform summarizing better that the low level ones. Studies show that high school and college students outperform younger students in summary writing in their propensity to plan ahead, in their sensitivity to find the main idea in text, and in their ability to condense more idea units into the same number of words.

Some researchers (Brown & Day, 1983; Brown, Day, et al., 1983; Hamed et al. 2014; Roelle et al. 2017; Winograd, 1984) focus on summary writing skills to identify good and poor readers.   In fact, summarization depends on the ability of a reader to understand the meaning of a text during reading, in order to make decisions about the importance of different pieces of information in the text. In general, summary can be divided into oral and written forms. This study will focus on summary writing, specifically expository writing which the students use daily in their classes.

Types of summary. Hidi and Anderson (1986) and Hill (1991) categorize summary writing into two kinds: reader-based summary and writer-based /text-based summary. The writer-based summary is one which the reader only reads to

comprehend the text and recall information in the content. This type of summary helps the writer to understand the content of the text and write the key points of the text. Moreover, the writer is usually unfamiliar with the text. In other words, the background knowledge of the writer is not matched with the information of the text. In addition, in a writer-based summary, there is no need to focus on linguistics and format of summary writing. Meaning that length of summary, punctuation, grammatical errors are not taken into consideration. Therefore, writers of this type of this type of summary are concerned more on the content to comprehend rather than the linguistic aspect or format of the text. Consequently, errors are the normal process which they make.

In contrast, the reader-based summary is the one that students write for a particular audience to read. The audience of this type of summary is usually the teachers and academic. The purpose of reader-based summary can be either to improve students' ability to summarize academic texts, write an article's abstract or a summary of a story or book. Hence, familiarity of the summary writer with the text is one of the significant factors in reader-based summary. In contrast to the writer-based summary, the writer's strategy in reader-based summary would be reading through the text several times and writing a summary based on large chunks or on all of it, with considerable concern for grammar, sentence form, and length. It is worthwhile to mention that reader-based summary is used in academic contexts.

Reader-based summary is more complicated compared to writer-based summary because the summary writer has to pay attention to both processes of summary writing, namely content and also awareness of linguistics aspects of the text such as structure, cohesion and format of the summary (Hidi & Anderson, 1986). In other words, planning of the main idea in the limited words along with appropriate

use of language in summary writing is the main reason that makes reader-based summary complex. Similarly, condensation, transformation and integration of the original ideas in the text are the factors which should be taken into account in reader-based summary (Ashrafzadeh & Nimehchisalem, 2015; Brown, Day, et al., 1983; Hidi & Anderson, 1986; Li, 2014; Yu, 2009). As the reader-based summary plays a significant role in academic writing, it is no surprise that even ESL students struggle in summarizing an academic text. This means ESL learners should pay attention both to the content and target linguistic errors which they might make as second language learners.

Finally, it is worth mentioning that these types of summaries are usually written in different ways (Hidi & Anderson, 1986), meaning that writing each one has its own strategies and processes.

Summary writing processes. Summary writing is a fruitful skill that helps the learners to develop their cognitive skills. The skill of writing a summary is developed by the processes involved in summary writing. These processes can help learners to solve a complex comprehension problem. Some researchers (Kintsch & van Dijk, 1978; Rumelhart, 1977) believe that the structure of summary already exist in the learners' mind as soon as they comprehend the text. Opponents of this idea (Brown & Day, 1983; Jansen et al. 2017; Karimpour & Karkia, 2016; Winograd, 1984) argue that in writing a summary, several processes and strategies are required in order to write a neat piece of summary. Hidi and Anderson (1986) hold that writing a summary is basically different from other types of genre. In writing other genres, the writer plans, generates ideas and organizes them. In summary writing, the writer not only reads and understands the text but also has to evaluate the original text and transform and organize ideas into the target text.

The summary writing processes by L1 learners have been suggested basically as three macro-structures by Kintsch and van Dijk (1978): (1) deletion, (2) generalization and (3) construction. According to this model, the processes of deletion, generalization and construction are determined by macrorules of the summarization. In this process, the reader reads through a text, reducing and organizing the microstructure (the structure of individual meaning units and their relations) to form a macrostructure (generalized representation of the meaning) through a series of transformations of the information using macrorules.

Kintsch and van Dijk (1978) contend that the application of the macrorules is applied under the control of the reader's schema where is the interaction between the reader's background or prior knowledge and the text comprehension. The reader's background knowledge determines which elements in the text are considered relevant or irrelevant. Identifying the important ideas is carried out based on textual and contextual relevance (van Dijk, 1979, cited in Winograd, 1984).

Brown and Day (1983) later suggested six rules which probably are the development of the above basic processes in Kintsch and van Dijk's model. Each of the deletion, generalization and construction processes in the Kintsch and van Dijk's model is divided into two sub-components in Brown and Day (1983) respectively: (1) deletion of trivial material, (2) deletion of redundant material (deletion 1&2) (3) substitution of a superordinate term for a list of items or actions (e.g., using pets for cats, dogs, goldfish, and parrots), (4) substitution of superordinate action for a list of a subcomponent of that action (e. g. "John went to London" for "John left the house", "John went to the train station", "John bought a ticket") (3&4 generalization),(5) selection of topic sentences and (6) invention of topic sentences (5&6 construction).

After that, Johnson (1983) described six processes during summarization of L1 learners. The first four processes are identified as summary writing pre-requisite processes and the last two are seen as central to the summarization process respectively: (1) comprehending individual proposition, (2) establishing connection between them, (3) identifying the structure of the text, (4) remembering the content, (5) selecting the information for inclusion in the summary and (6) formulating a concise and coherent verbal representation (oral summary).

In this regard, it might be considered that the selection process here has the same function in the deletion process of Kintsch and van Dijk's using different terminology. It means that in the selection/deletion process the decisions are made about which ideas should be deleted and included in the summaries.

For the oral summary which Johnson (1983) suggested a rule in the last one, the generalization and construction processes might function simultaneously but still, there may be critics in the Johnson's model that in which steps of summarization, generalization and construction are involved.

Hare and Borchard (1984) proposed five rules in which the language used to describe these processes is simple and more child-oriented: (1) include no unnecessary details, (2) collapse lists, (3) use topic sentences, (4) integrate information and (5) "polish" the summary. These rules might stem from Kintsch and van Dijk's model (1978). In other words, the first sub-component in Hare and Borchard (1984) can be identified as the deletion process, the second sub-component as generalization and the last three sub-components can be related to the construction process in Kintsch and van Dijk's (1978) model.

In 1986, Sherrard added the "selection" process to the three categories in Kintsch and van Dijk's (1978) model. In fact, Sherrard put selection before deletion

so that the writer first evaluates the text and then makes a decision about what to include in the summary.

Finally, Hidi and Anderson (1986) analyzed the operational procedures used to summarize and suggested four requirements for writing the summary: (1) comprehension, (2) evaluation, (3) condensation and (4) frequent transformation of ideas. In fact, the comprehension and evaluation processes are the first concerns in Hidi and Anderson's model (1986). They argued that summarizing is more complex than simple recall. In other words, it reflects the actual process; the writer's task in summary writing is not only to originate and organize ideas but also to choose what to include, eliminate and reorganize and this refers to the deletion process in which decisions are made about which ideas should be deleted and included in the summaries. However, the last two processes in Hidi and Anderson (1986) (condensation and frequent transformation of ideas) might have the same function in the generalization and construction processes in the Kintsch and van Dijk model (1978), whereby their specific functions have not been identified clearly in Hidi and Anderson (1986).

Though five studies, as mentioned before, after Kintsch and van Dijk (1978) used different models to describe the thinking processes involved in summarization, as already noted above, all of them inherently pose three processes which are not independent from Kintsch and van Dijk's (1978) process model proposed initially. It is noteworthy to mention that the researcher in this study also used Kintsch and van Dijk (1978) as the analysis of the steps and processes of ESL undergraduates'' summarizing of the expository text.

Factors in summary writing. Two main factors influence summary writing: the presence or absence of the text while summarizing and characteristics of the

original text (Ashrafzadeh & Nimehchisalem, 2015). First, the presence or absence of the text while summarizing can influence the necessary thinking. Similarly, Ambruster (1984, cited in Hidi & Anderson, 1986) stated that the presence or absence of text may affect the quality of the summarizing process. She proposed that when the text is presented during summarizing, the writer scans the text repeatedly which leads the summary to better identification of important points, condensation and clarification of inconsistencies. Ambruster (1984, cited in Anderson & Hidi, 1988) and other (Abrams & Byrd, 2016; Keck, 2014; Sherrard, 1986; Yasuda 2015) has pointed out various devices that authors use to stress importance, for example, "introductory statements, topic sentences, summary statements, underlining, italic, pointer phrases, repetition and so on" (p. 27). On the other hand, presenting the text during summarization allows students to copy the text material instead of using their own words which is what some ESL students tend to do when they write summaries (Keck, 2014; Sen & Kulelia, 2015; Geranpayeh, 1993). This might be because of the students' low proficiency in English. According to Anderson and Hidi (1988), if students are allowed to look at the text while summarizing, they will have more mental space for the selection and condensation process. If the text is absent, text may be reduced for the wrong reason. In fact, the text is presented in classes during the summarization since it is more typical of summary writing task for academic purpose to have the text present during the process.

Second, characteristics of the text are important. It is easier to select important ideas from certain types of text than from others (Hidi & Anderson, 1986). Although there are many characteristics to a text, the three most closely related to the summarization process are length, complexity and text type.

Length. The length of the text material has significant impact on the extent of selection, condensation and transformation during the summarization process. Identifying topic sentences and selecting main ideas are easier for shorter texts because the ideas are closely related to one another, but with a long text the process becomes more difficult as more selection and condensation is required due to the presence of large number of ideas in the text when summarizing (Hahn & Goldman, 1983; Hidi & Anderson, 1986; Keck, 2014; Ülper & Okuyan, 2010).

Text complexity of the original material. Text complexity of the original material also seems to affect summarization. Text complexity includes some aspects such as low-frequency vocabulary; elaborate sentence structure, abstractions, unfamiliarity of concepts and ideas and inappropriate or vague organization, that is, the lack of specific content organizers such as topic sentences that denote the main ideas (Hidi & Anderson, 1986; Karimpour & Karkia, 2016; Susar & Akkaya, 2009).

Researchers contend that the more complex the text, the more difficult the process of summarization. This is because more judgments are required to decide which ideas are important and therefore, more transformations of the original ideas are needed. Because of difficult texts, students are taught to condense the material accurately and concisely (Anderson & Hidi, 1988; Brown & Day, 1983; Calkin, 2017; Hidi & Anderson, 1986; Ngcobo, Ndaba, Nyangiwe, Mpungose & Rafiq Jamal, 2016).

According to Huh (1984a, 1985b, cited in Hidi & Anderson, 1986), children and even adult subjects were unable to summarize well if the target text was complex. As a matter of fact, when summary writers faced with a complex text, they tended to adopt a linear paragraph-by-paragraph strategy rather than a whole text reorganization and synthesis of the ideas.

Text type. The type of the text is the last characteristic of the original text which is divided into two parts, narrative and expository text. In this study, expository text was considered as the main type of the text.

Expository text is defined as prose that explains or informs about something (Black & Bower, 1980; Yasuda, 2015). According to Hidi and Anderson (1986), expository text is often organized according to a hierarchical pattern of main ideas and supporting details, making them more difficult to summarize.

Moreover, Longacre (1976) in his study on text structure identified four basic features of expository text; it is not agent oriented; if the people are introduced they are incidental and are usually referred to in the third person. This type of text is subject matter oriented and time is not focal to the discourse, so various tenses may be used. Finally, expository text is usually connected by logical linkage (Longacre, 1976, cited in Kent, 1984; Schleinschok et al. 2017).

Expository texts are classified into six major categories: generalization, cause and effect, classification, sequence, compare and contrast, and enumeration. An author using the generalization structure, for example, states a generalized main idea statement and then proceeds to defend the argument with facts, reasons, or examples—the so-called supporting details. With the compare and contrast structure, a writer relates the similarities and differences between two subjects. In an enumeration paragraph, a simple listing of elements is presented (Cook & Mayer, 1988; Horowitz, 1985a, 1985b; Mayer, Haring, Brand, & Walker, 1980). It is worth mentioning that compare and contrast was used in this study as the original sources of summary writing in this study.

Hidi and Anderson (1986) claimed that the students' ability to summarize depends on the type of text used during the summarization. This is supported by

Taylor and Beach (1984) who point out that difficulty with summarizing expository text is experienced by students even in high school (cited in Pincus, Geller, & Stover, 1986).

Difficulty of expository text. Summarization of expository text is difficult for both children and adults (Tierney, Bridge, & Cera, 1978; Dole, Valencia, Greer, & Wardrop, 1991, cited in Gordon, 1992; Hassani & Maasum, 2012; Schleinschok et al. 2017). This difficulty may be attributed to many factors including insufficient background knowledge of the subject of the text, lack of interest and motivation and lack of sensitivity to the text structure.

Dole et al. (1991, cited in Gordon, 1992) in their study found significant differences among fifth grade students' comprehension scores for the three expository texts. They speculated that several variables affected students' comprehension of expository texts such as level of prior knowledge, the text structure, text conciseness and students' interest. But these variables seemed not to affect narrative text comprehension.

L1 summary writing. Although "summarization is a major issue for literacy development and content learning" (Friend, 2001; Gao, 2013; Grabe, 2003, p. 252; see also Grabe, 2001b;), compared to others, only a few aspects of language learning research investigated summary writing, mainly focused on different aspects of L1 summary writing (Armbruster, Anderson & Ostertag 1987 ; Basham & Rounds, 1984; Baumann, 1984; Bean, 1986; Brown, et al. 1983; Bolton and Kuteeva 2012; Day, 1986; Drust, 1989; Furtado & Johnson, 2010; Hare & Borchardt, 1984; Hidi & Anderson, 1986; Hood, 2008; Keck, 2014; Kintsch, 1990; Kirkland & Saunders, 1991; Marzec-Stawiarska , 2016; Rinehart, Stahl, & Erickson 1986; Taylor, 1986: Williams 2007; Vang, 2013; Yamada, 2002; Yu, 2007). Among these studies, some

have worked on how the native English learners summarize different kind of texts and some have investigated the role of discourse, syntax and other aspects on summarizing in relation to L1 learners. For instance, Hood (2008) investigated how the meaning of the words can be changed from the original source to L1 students' notes and finally to summary drafts of the student. She also examined the theoretical level of the changes of the words and suggested some effective ways to scaffold the learner's tasks in order to improve their academic writing in English. Finally, she highlighted the importance of a framework of metalinguistic knowledge and linguistic resources that are necessary in the class activities so that the students are able to use their summary writing skills effectively.

Actually, the summary writing processes have been suggested first by Dennis and Sharp in1966. From 1966 to the present, the interest of research on native English summaries was much more than in L2 summary writing.

In addition, among L1 research, few studies have investigated the student's problems during summarization (Garner, 1984; Hutchin, 1987). In other words, most of the studies are done only on L1 specific process especially paraphrasing and there are few studies on the processes which ESL learners use in specific during summarization (Drust, 1989).

Similarly, reviewing the present literature on summary writing, the implications for improvement of ESL learners during summarization have not yet been investigated deeply by researchers (Baba, 2007; Cumming, 1989; Cumming, Rebuffot, & Ledwell, 1989; Feng & Shi, 2002; Friend, 2001; Hashim, 2003; Johns & Mayes, 1990). However, there are a few studies that have been worked on the development skills for summarization (Hamed et al. 2014; Keck, 2014; Marzec-Stawiarska, 2016; Ngcobo et al. 2016; Sajedi, 2014).

L2 summary writing. The summary writer has to do tremendous editing in the summary processes such as inversion, deletion and reorganization of the text while the original meaning of the text should be transferred without any misinterpretation (Anderson & Hindi, 1988). In other words, ESL learners have to deal with the process of summarization, the grammatical construction and the errors which occur intentionally because of the interferences of both languages (Heshmati, 1992).

Although researchers (Ahangari et al. 2014; Baba, 2007; Cumming et al. 1989; Esmaeili, 2002; Grabe, 2001b, 2003; Hassani & Maasum, 2012; Hirvela & Due, 2013; Holmes & Ramos, 1993; Johns & Mayes, 1990; Kim, 2001; Kirkland & Saunders, 1991; Lin & Maarof, 2014; Li, 2014; Rivard, 2001; Sajedi, 2014; Sarig, 1993; Sen & Kulelia, 2015; Yamada, 2002; Yang & Shi, 2003; Yasuda, 2015) discussed that the number of L2 research on summary writing is much smaller than in L1 research, the latest studies on summary writing have been incredibly increased in the recent years. The following studies are the examples of some recent literature on different aspects of summary writing.

Jansen et al. (2017) and Olive and Barbier (2017) investigated the impact of note-taking using summarizing techniques. Both studies concluded that note taking is very beneficial for students to understand the content and increase their cognitive loads.

Abrams and Byrd (2016), on the hand, worked on planning, mind mapping and chronological sequence of summary writing skills of 26 freshmen German students in three different levels of text difficulty. They analyzed three written summaries and they concluded that pre-task and planning strategy help L2 students to improve their summary writing processes.

Marzec-Stawiarska (2016) worked on the development of reading skills of 80 EFL tertiary students by using summarization techniques to enhance their comprehension of reading material. Their study showed a significant difference in understanding the text, especially for weaker students.

Ashrafzadeh & Nimehchisalem (2015) investigated the main problems of tertiary students while they were writing business summary writing. They analyzed 69 drafts of Malaysian students and they concluded that although the majority of these students has scored pretty high for the content of their written summaries, they were suffering from lack of organization and vocabulary skills to write an effective summary.

McDonough et al. (2014) worked on the analysing three paragraphs of 46 EFL learners within 17 weeks. They focused on the paraphrasing strategies by directed instructions that had a significant result in reduction of copying from the source and enhancement the learners' summarizing skills.

Hassani and Maasum (2012) examined the reading performance by L2 learners in the formats of two tests, namely summary writing and open-ended questions. They also identified English language proficiency of 35 postgraduate learners in a reading component of the TOEFL test. In their study, based on descriptive and inferential statistics, they found that there was no significant difference between the two tests in reading comprehension by postgraduates. However, according to the results of t-test for two methods of testing, the learners gained high achievement in summary writing compared to open ended questions.

Baba (2009) investigated the aspects of the lexical proficiency of 68 Japanese undergraduates during writing two summary tasks in English. Particularly, she evaluated the reading comprehension and proficiency in English vocabulary and

writing proficiency in Japanese. The length of summaries was also considered in this study. She found that the lexical proficiency was less considerable compared to reading comprehension and length of summaries. Finally, she articulated that the ability of making an appropriate structure of semantic network of different words helped ESL students to generalize and paraphrase the source text effectively. She insisted that the ability of changing words metalinguistically in summary writing can help students to be successful in summarizing the text. In other words, if the students know how to use the words and manipulate them based on their knowledge, including grammatical structure, they can summarize texts accurately.

Sajedi (2014) investigated the impact of collaborative summary writing on 86 fresh EFL learners in three classes at Urmia University of Medical Sciences, Iran. The research was used pre-and posttest. The learners' summaries were evaluated based on the content, organization, grammar, vocabulary and mechanics. Furthermore, she found that collaborative summary writing can help students to develop their writing skills in summarizing. In specific, the learners were successful in improving content organization and vocabulary. However, grammar and mechanics were not developed much in collaborative summary writing.

Similarly, Lin and Maarof (2014) identified the problems and perceptions of using collaborative summary writing by 30 ESL college students in Malaysia. Students were assigned to summarize two tasks in two classes. They used semi structured interview and questionnaire to conduct the study. Data analysis showed that the majority of the students write better collaboratively compared to individual summary writing. Furthermore the students boosted their self-confidence and grammatical accuracy.

On the other hand, Li (2014) investigated the summary writing performance based on different genres. The study consisted of 86 EFL language learners in a Chinese university. All students wrote two genres, namely narrative and expository texts. The social data collection consisted of questionnaire surveys and post-test interview. Based on the analysis of the students' summaries, EFL learners achieved higher marks on expository than narrative summary writing. However, EFL students mentioned in the questionnaires that narrative tasks are easier for them than expository one. Therefore, there was a significant contrast between the students' perceptions and their own performances in summary writing. Finally, Li (2014) concluded that the influence of genre on test performance is helpful to test developers in designing different genres based on the task difficulty.

Likewise, Yasuda (2015) examined genre awareness and meaning making choices of EFL students' summary writing. The participants of this study included 30 EFL undergraduates at different proficiency levels. The researcher examined pre-and post-instructional summary writing. Furthermore, the researcher used the framework of systemic functional linguistics to see the changes in the quality of learner's summary drafts. Analysis showed that students were able to discover three aspects of word meanings, namely ideational, interpersonal and textual. Interestingly, undergraduates started to change their vocabulary because of the training of instructions of genre awareness. Therefore, after training, the students substituted more sophisticated words compared to the ones in their previous drafts, before the training. Finally, Yasuda (2015) highlighted that high proficiency EFL students were able to correct their grammatical errors after post instructional summary writing. However, low proficiency EFL learners were not very successful in changing their grammar mistakes after post instructional summary writing.

With different aspect, Ahangari et al. (2014) worked on the influence of scaffolding learning on the content retention of summary writing by 40 EFL secondary students. The researchers used experimental and control group as well as pre-and post-test and KET test. The EFL learners were assigned to write two narrative summaries before and after the scaffolding learning. The analysis indicated that EFL learners who were assisted by scaffolding in summary writing were much more successful than the students not helped in summarizing the text. Finally, they emphasized that scaffolding make EFL learners become independent in summary writing.

Finally, Hirvela and Due (2013) investigated the EFL sophomores' perceptions on purposes and functions of paraphrasing and their performances of paraphrasing in China. The sources of data collection were think aloud protocols and text-based interviews. The EFL learners were assigned to paraphrase a short paragraph from their subject readings in their field. The analysis showed that a multilayered relationship between the students' perspectives and their paraphrasing performances existed in EFL learners' summaries. They suggested that EFL learners can be successful in summary writing, particularly paraphrasing if they have enough knowledge of paraphrasing skills in their academic writing.

The available literature on L2 summary writing, as mentioned before, has focused on the other aspects of L2 summary such as: the impact of note-taking using summarizing techniques, planning, mind mapping and chronological sequence of summary writing skills, using summarization techniques to enhance reading comprehension, problems of tertiary students in writing business summary writing, enhancement the learners' summarizing skills, the differences between L1 & L2, analysis of summary protocols of ESL students, challenges of reading and

summarizing in L2, investigating the summary writing process and metacognition strategies with high proficiency students in small groups, and summarizing by bilingual learners furthermore. There are a few studies (Berthold et al. 2007; Sarig, 1993; Roelle et al. 2017; Yang & Shi, 2003) on L2 metacognitive and cognitive strategies of summary writing. Finally, to the best of the researcher's knowledge, literature review has shown that no research has been done on the undergraduates' shifts between the metacognitive and cognitive strategies in summarizing expository texts.

Comparison of summary writing in L1 and L2. In the study involving foreign speakers of English, Kozminsky and Graetz (1986) attempted to determine whether second language speakers (L2) would be less efficient in writing summaries. Their investigation suggests that L2 speakers focused more on the word level than did first language speakers. However, L2 summaries contained more abstraction operations when compared to L1 summaries which contained more copy operations. Kozminsky and Graetz (1986) concluded that L2 students should be trained in writing summaries at the paragraph level rather than on the global level of the text.

Stein (1993) proposed that because non-native students are not proficient in a second/foreign language, they are not strategic learners. In contrast, Crawford (1989) in his research on bilingual education maintained that skills are transferred from L1 to L2, leading to the idea that if students are strategic learners in their first language, they will transfer the strategies when using or learning L2.

As summarization is considered as one of the genres of the writing skill, the differences of writing skills between L1 and L2 speakers can be significant. According to El-Koumy (1997), three major differences exist between the writing skill of L1 and L2 speakers. The first and second differences might be due to the

teaching methods and proficiency level of non-native teachers. And the third is the use of language outside the classroom. As Clark and Heath (1983) argued, the everyday use of English depends on coordinating what the person produces. In other words, the more the students are exposed to English outside schools, the better they can improve their writing skill. The above factors might also affect summarization since summary is one of the writing genres.

On the other hand, Jones and Tetroe (1978) pointed out the differences between L1 and L2 speakers in other terms. They maintained that the L2 speakers are strong in thinking skills and they can write holistically and long compositions according to the appropriate linguistic and syntactic complexity. In contrast, according to Akyel and Kamisli (1996), the overall conclusion to be drawn from research to date in L2 composing and a comparison of the results with those of L1 composing process research is that the composing skills of proficient and unskilled L2 writers are very similar to those of skilled and unskilled L1 writers.

Similarly, Moghaddam (2006) argued that although L2 undergraduates write long summary, L1 tertiary learners have strong knowledge in vocabulary. However, both groups lack summarizing skills such as selection of main ideas and condensation.

Finally, Keck (2014) investigated the reasons of using copying and paraphrasing skills from the source text in summary writing and noted that the differences between novice and expert in using these skills in summarizing an academic text. She analyzed 227 summaries of undergraduates including 124 summaries of L1 writers and 103 summaries of L2 writers. All participants wrote one paragraph summary from a 1000-word sourced text. She found that novice writers used more copying skills than experienced learners. Furthermore, she discussed that both L1 and L2 students followed the same procedure to select the main idea in

summarizing the academic text. Finally, she emphasized that coping strategy by L2 learners could not be generalized because of a few L2 writers.

Chapter Summary

This chapter highlighted two main issues. The first part discussed the conceptual issues related to the theoretical framework of the current study. These issues were such as the reading-writing connection of summarization, the metacognitive and cognitive strategies of summarization in writing and summarization, two models of summarizations and finally the theoretical framework of the study. The second part covered the literature review of findings on summary writing such as types of summary writing, factors of summary writing and L1 and L2 summary writing. The next chapter will discuss the methodology used in the study.

Chapter 3 Research Methodology

Introduction

    This study investigates the ESL undergraduates' shifts between the metacognitive and cognitive strategies in summary writing. This study also identifies metacognitive and cognitive strategies which ESL undergraduates use during summarizing expository text. This chapter includes selection of setting, description on the selection of participants, design of the study, data collection procedure and data analysis.

Selection of Setting

  A major university of Malaysia located in the state of Kuala Lumpur was chosen as the site for this study. This university has local and international students; the researcher collected the initial data among eighty-five students who were volunteers for participating in the current study. Among these students, thirty-two of them were selected based on their background knowledge and their availability to complete the data collection. However, only five students continued to the end of data collection whose three were from Brunei and two were from Malaysia. The site was chosen for three main reasons. Firstly, the researcher chooses to carry out this study in Malaysia, because the English language learners in Malaysia are Second Language Learners and they can speak English during data collection. Secondly, this university is the major university in Kuala Lumpur and it was convenient for the researcher to collect the data in a familiar setting and environment. Convenient access to the research site enabled the researcher to proceed with data collection and further references to participants for clarity of data analysis. Finally, the researcher was able to access the site easily since she was a part time lecturer in this university.

According to Merriam (2009), accessibility to the site plays an important role in the data collection procedures.

The Faculty of Education, TESL, was chosen in this study because, first, the researcher was familiar with the site and as Creswell (2008, p. 213) mentioned, the site of the research plays a significant role in qualitative research that can best help the researcher to understand the central phenomenon of the research. The second reason was that the researcher considered that the students from the Faculty of Education are more familiar with the concept of teaching and practice and their English proficiency was higher than students in other faculties based on their field of study (TESL). It is worthwhile to mention that Malaysian students have to pass acceptable MUET (Malaysian University English Test) scores in or to get to the university. Therefore, the researcher chose these students in order to have accurate data without language barrier. Thus, they could be the best option for collection of rich data for this in-depth study.

Participants in the Study

As mentioned earlier, initial data collection of the study started with 85 students in second and third year in four classes. After the initial data collection, thirty-five students were selected based on their MUET (Malaysian University English Test) scores obtained (i.e., band 5-6) and their availability for the research. That is why the participants were sophomores and seniors in four classes in the Faculty of Education. Among these students, only five of them were present in all sessions of training and data collection. Therefore, the participants of the current study involved five ESL undergraduates summarizing a compare-contrast expository text in one of the universities in Kuala Lumpur. Table 3.1 shows the participants' profile.

Table 3.1

Summary of Participants' Profile

Participants	MUET Test	Year of University	Age	Sex
Mona	6	3	20	Female
Nisa	6	2	19	Female
Myra	6	2	19	Female
Aida	5	2	19	Female
Hana	5	2	19	Female

The rationale for selecting a homogeneous sample of students with almost the same proficiency level was to ensure that the elements of language and writing skills were constant in order to get an accurate assessment of students' summarizing ability for the expository text. Furthermore, the researcher chose year two and year three students for four reasons: first, to have more alternatives for selection of the participants, second, to have different levels of the students to have in-depth analysis in this study, third, to collect data based on the university schedule in which only year two and three students were available based on selection criteria in this research which was MUET band 5-6 and finally, to get more fluent students in English since they have already started their degree and they have passed some courses in English.

All selected undergraduates were voluntary participants in this study. This factor supports Wang (2004) who mentioned that voluntary factor increases the reliability and dependability of think- aloud. The researcher held a briefing before the data collection. She explained the purpose of the study, guaranteed the confidentiality of the data and anonymity in the research report, and asked the participants to be as truthful as possible in all the data collection procedures in order to get richer data.

Design of the Study

This study adopted basic interpretive approach to address the research questions of this study to describe both the phenomenon of Metacognitive and Cognitive strategies and their interactions during summarization. As Crotty (1998, pp. 42-43) discussed, researchers do not "discover" the meanings of a phenomenon, rather they construct them and these meanings are directly related to the researchers' interpretation of the world. Therefore, the researcher tried to make the accurate interpretation and construct the phenomena based on the analysis in this study.

Furthermore, Merriam (2009, pp. 22-23) mentioned, the most common "type" of qualitative research in applied field of practice such as education is a basic, interpretive study. Based on this approach, researchers are interested in understanding three phenomena: the quality of people's interpretation of their experiences, the quality of construction of their worlds and finally the kinds of meaning they attribute to their experience (Merriam, 2009). Generally, there is a difference between basic and other types of qualitative studies. In particular, all types of qualitative studies have additional dimensions beside their basic features. For example, in phenomenological research, the underlying structure of the phenomenon is being sought, in ethnography study the interaction of people as well as their culture is concerned, in grounded theory, building a substantive theory is important; in narrative, the analysis of story is vital and finally in critical qualitative research, social critiques are significant in the research (Merriam, 2009).

Sources of Data and Rationale for Employing Them

Data were collected through think aloud protocols, semi-structured interviews, written summary and original summary text scripts.

Think aloud protocols. Think aloud method is a reliable source of data collection which is used by many researchers in psychology and other areas (Van Semeren, Barnard, & Sandberg, 1994a). In fact, using think aloud protocol in the process studies stemmed from an internal cognitive process which is related to the subject's human memory and the task knowledge (Van Someren, Barnard, & Sandberg, 1994a & 1994b). Wang (2004) mentioned that think aloud method can assist the researcher in collecting data directly and help them understand the cognitive processes of the person's mind. Although think aloud method is one of the best sources of data in cognitive processes, the researcher should understand the circumstances properly and elicit the data carefully.

The purpose of using think aloud is "to elicit the inner thoughts or cognitive processes that illuminate what is going on in a person's head during the performance of a task" (Patton, 2002, p. 385). Likewise, summary writing's metacognitive and cognitive strategies and the learners' shifts between these strategies were basically built on the mental processes which display subjects' detailed knowledge and the strategies that they were engaging in during text summarization. This is in line with other studies on metacognititive or/and cognitive strategies which used think aloud as the major source of data collection (Ellis et al. 2014; Plakan 2009; Maasum & Maarof, 2012; Vandergrift and Goh ,2012; Sarig's, 1993; Sevgi 2016; Yang and Shi, 2003 Zhusspova & Kazbekova, 2016)

Furthermore, similar to other strategy process research in summary writing and writing studies (Beare, 2000; Bereiter & Scardamalia, 1987; Cumming, 1989; Flower & Hayes, 1980; Hu & Chen, 2007; Sarig 1993; Sasaki, 2000; Yang & Shi, 2003), this study relied on think aloud as the main source of data collection by asking the participants to think aloud during summarizing a "compare and contrast"

expository text. The participants were required to externalize and verbalize their thoughts while engaged in summarizing the expository text. It is very important to highlight that the researcher asked the students to think aloud in English because the she, as a foreign student, was unable to understand the native language of the students. Therefore, there might be some misunderstanding in the interpretation of data even if their think aloud protocols in native language are translated to English. Thus, the researcher chose the think aloud protocols in English to be able to collect and analyze the accurate data for this study.

Semi-structured interviews. Interview is the most widely used method of data collection in qualitative research (Merriam, 2009). Interview may be used either as the primary strategy for data collection or in conjunction with other techniques (Bogdan & Biklen, 1982, cited in Hoepfl, 1997, p. 5). Interview is "a process in which a researcher and participant engage in a conversation focused on questions related to a research study" (DeMarrais, 2004, p. 55). There are two significant differences between qualitative research interviews with other types. Firstly, in qualitative research, the researcher listens carefully to pick up key words, phrases and ideas deeply. Secondly, the researcher focuses on "nonverbal cues" that describe the interviewee's emotional states (Rubin & Rubin, 1997, cited in Berg, 2001, pp. 84-85). On the other hand, some researchers (Blumber, 1969; Day, 1993; Mishler, 1986; Seidman, 2006) stress the significance of context in interviews. They explain that in-depth interviewing, mostly in qualitative research, can help the researcher not only to access the interviewees' behavior in context but also to understand their actions based on their behavior (p. 2). Moreover, Loftland and Loftland (1984) clarify that through interview in qualitative research, the researcher focuses on particular importance or exclude questions the investigator has found to be

"unproductive for the goal of the research". Furthermore, researchers (Bosher, 1998; Merriam, 2009; Patton, 2002) have drawn attention to the fact that interview is necessary in two important areas where the researcher cannot observe either people's feelings or their interpretation of the world around them.

One type of interview is the semi-structured interview (Creswell, 2008; Denzin, 2000a; Kvale, 1996; Merriam, 2009; Patton, 2002; Seidman, 2006). According to Merriam (2009), most qualitative research uses less structured interview called semi-structured interview. This means the questions are open-ended and specific information is usually expected from the participants. The unique feature of semi-structured interview is that its format "allows the researcher to respond to the situation at hand, to the emerging worldview of the respondent and to new ideas on the topic" (Merriam, 2009, p. 90). Spradley (1979) discusses that purpose of interview is "to have the participant reconstruct his or her experience within the topic under study" (p. 15). Moreover, Berg (2001, p. 70) explains that although the questions in this type of interview is ordered systematically and consistently, the interviewers are permitted to probe far beyond the answers to their prepared and standardized questions.

The other aspect of semi-structured interview is the researcher's awareness of linguistic variability. This means that the emphasis is upon meaning rather than lexical comparability. In fact, the researcher needs to focus on what the interviewees mean by what they say, not how they choose to say it (Willing, 2008).

It is worthwhile to mention that process research as well as other qualitative research is not observable without interview (Patton, 2002). Since this study was one of the instances in which the researcher was unable to identify all the ESL undergraduates' shifts between metacognitive and cognitive strategies and also all

metacognitive and cognitive strategies employed by ESL undergraduates in summary writing specifically, semi-structured interview was a complementary source of data collection in this study.

Written summary and original summary text scripts. The other sources of data were written summary and the scripts created by participants on the original sources of summary texts. It is vital to elaborate two terms in this study. Written summary is the students' drafts and original summary text script is the reading text which students should summarize them. Some students underlined, circled the words, wrote some key points in the margin of the text or crossed out the extra information. In fact, the scripts, notes, outlines and final summary written products were the complementary sources of data along with other sources of data collection. Gass and Mackey (2000) mentioned that showing participants the scripts and the written summary during the interview is beneficial for collecting reliable data. It is necessary to indicate that the students' drafts and their scripts helped the researcher to understand participant's actions and strategies during think aloud, for example, during underlining, writing or circling the key points in selecting the main ideas. Moreover, they were very useful to collect the accurate data during the interviews like asking students why they wrote particular works or underlined specific key words and so on. On the other hand, analyzing the participants' written summaries is essential in this study in order to differentiate the differences what they were thinking and what they were writing. Therefore, without analyzing the summary drafts, the researcher was not able to develop the strategies and interactions between them accurately.

Writing tasks. The writing task of this study was the expository text for two reasons. First, expository text has been counted as one of the important text

structures in academic writing (Dunlap, 1999; Hidi & Anderson 1986; Hinds, 1990; Meyer, 1975; Meyer, Haring, Brandt, &Walker, 1980; Norment, 1986; Rumelhart & Ortony, 1977; van Dijk & Kintsch, 1983; Meisuo, 2000). Second, expository texts are categorized as the difficult academic texts which the learners should deal with in schools and universities (Rumelhart & Ortony, 1977; van Dijk & Kintsch, 1983). The ability to read, understand and write expository texts is the main factor which the learners depend on in their reading and writing in and out of school. Second, expository text employs a variety of rhetorical structures including narration, compare-contrast, cause-effect, exploratory, problem-solution and a combination of these structure (Bean, Singer, Sorter, & Frazee, 1983). In this study, compare-contrast was selected since it is one of the common genres in the university context.

Basically, the expository text was chosen from one of the IELTS examination books which were standard and the text was used to examine the general English proficiency for academic purpose. The compare-contrast exploratory text was an 898-word text with eleven paragraphs and the topic was about the intelligence of ants (Appendix A, see p. 266). On the Flesch-Kincaid Readability statistics, this text had a readability score of 10.8.

Data Collection Procedure

The data collection procedure of the study began in October and lasted three months. As mentioned earlier, thirty-two ESL undergraduates were selected based on their MUET test results and their availability which only five of them were completed the data collection for this study. The data collection procedure for this study involved five phases.

Phase one was the data collection of the background of the participants to choose the qualified participants among four classes. In this phase, the researcher

gave the background questionnaire to eighty-five participants in year two and three to get information about their background for selection of participants. Based on the background knowledge of participants and their availability, thirty-two of them were selected for the study.

Phase two was the session in which the researcher met each selected participant and explained the information and benefits of this research. She also asked for the undergraduates' permission to conduct this study; the consent forms were signed by the participants in this session and finally she set the meeting with participants for the think aloud-training session.

In phase three, the researcher had training sessions with the participant in order to teach them how to use think aloud effectively. The think aloud training sessions were conducted in eight separate sessions of participating of four students. Each session was 2 hours and the total think aloud training was 16 hours. Think aloud training was based on Perkins's training protocol (1983) through different activities such as mathematics solutions, puzzles and reading comprehension.

Phase four was the actual data collection, including summary writing tasks and think aloud protocols. The researcher chose a quiet lecture hall for this purpose in the university. She reminded the participants the steps of think aloud and distributed the original reading material paper with some extra blank paper. In fact, the researcher did not limit the number of drafts since the purpose of this study was to see between the metacognitive and cognitive strategies and the interactions between them. It is worthwhile to mention that the researcher asked the participants to think aloud in English as the researcher is a foreigner and was unable to analyze local languages. After the undergraduates completed their summaries, they handed in their summary drafts.

Finally, phase five was the interview session. The researcher had an interview with each participant right after the think aloud sessions for about 20 to 40 minutes. The researcher had interviews with them to find out the metacognitive and cognitive strategies used in their summary writing and identify the participants' shifts between these strategies. During the interview, the researcher showed their drafts and summary scripts and asked some question about the reason of their action. For instance, she asked them " why did you underline this part" or " was there any reason that you wrote this word in margin". The reason behind this was that the researcher could understand the strategies that they applied during their summarization. Thus, the summary scripts were very helpful to analyze the participants; think aloud accurately.

It is worthwhile to mention that, the compare-contrast text was given to the undergraduates to summarize in different days based on their schedule. As it was mentioned earlier, the session for think aloud varied for each participant from 50 to 90 minutes. As the researcher's purpose was to find out the metacognitive and cognitive strategies of summary writing and the learners' shifts between these strategies, the researcher assigned more time for summarizing the task. Therefore, she asked the participants to complete the task within 2 hours. The retrospective interview for each task was about 20 to 40 minutes, immediately after the think aloud, which was audiotaped, was transcribed as well.

Participants' training on think aloud. The researcher chose a lecture hall for this purpose in the university. Each participant received around approximately two hours think-aloud training a few days before the actual data collection. It is very important to mention that all thirty-two students attended the think aloud before some of them quit the attending. Therefore, the think aloud training was conducted

with four participants in each session. The total of sessions were eight and the total hours of think aloud for all was 16 hours. The think aloud training was based on Perkins (1983). Ericson and Simon (1993) insist on the appropriate training of the participants before think aloud protocols. In fact, the participant's readiness and the quality of the think aloud training are the significant elements in collecting rich data. Therefore, the instruction from Perkins (1983) was used for the instructions to train the participants. There were seven instructions: 1. Say whatever is on your mind. Do not hold back hunches, guesses, wild ideas, images and intentions. 2. Speak as continuously as possible. Say something at least once every five seconds. 3. Speak audibly. Watch out for your voice dropping as you become involved. 4. Speak as telegraphically as you please. Do not worry about complete sentences and eloquence. 5. Do not over explain or justify. Analyze no more than you would normally do. 6. Do not elaborate past events. Get into the pattern of saying what you are thinking now. 7. Verbalize in English only. The procedure of think aloud training was based on different activities during the session. First, the researcher read the steps of think aloud and familiarized the students with think aloud strategy After that, she demonstrated the actual think aloud using a puzzle. Next, she gave the participants different puzzles to try to think aloud. The next activity was simple math problems. She gave each student some math problems to solve while they were thinking aloud. Finally, she gave them five short reading comprehension tasks to read and answer the question while they were thinking aloud. The researcher was observing all the activities of each student during the training. She helped the students if they had any questions and she gave them some advice to do better think aloud. The training sessions were a few days before actual data collection.

This was the opposite point of Perkins (1983) who mentioned that participants should be in a comfortable situation to either think in English or their native languages. It is worth noting that one of the limitations of this research was that the participants were not allowed to think in their native languages, as the researcher was unable to understand and analyze the data in Bahasa Malaysia. Thus, the data analysis would be so difficult to be analyzed. In this case, there could be two solutions. First, asking an interpreter to translate those words or omission of sections that are in other language that may both lead to the lack of accuracy of data. For these reasons mentioned above, the researcher decided to ask the participants to think aloud in English in order to prevent any barriers in data collection.

Summary writing sessions.   The actual summarizing and think aloud protocols were conducted in a quiet lecture hall at the Faculty of Education. Summary writing sessions were conducted individually. First, the stationery, the task and an audio recorder were given to the participant. Then, the researcher reviewed the think aloud procedure for the participant to ensure the credibility of data collection; finally, the researcher asked the participants to start if they were ready. The researcher was present in the lecture hall for any enquiries from the student. As mentioned earlier, there was no time limit for the participants to complete the task since the researcher's purpose was to find out the metacognitive and cognitive strategies of summarizing the expository text as well as the learners' shifts between the strategies.

Semi-structured Interview.   After a short break of about 10 minutes with light refreshment, the researcher started to interview the participants. Interview questions were adopted from Yang and Shi's summary process (2003) and had been modified and checked by TESL experts. The interviews were conducted in the same

lecture hall as well. Based on the researcher's focus, all interviews were also audio-taped for future transcription. Immediately after the summary writing session, during the interview, the researcher asked the participants to clarify any vague points which they might make on their summary writing or original summary scripts (Patton, 2002). The interview questions were mainly focused on the strategies which they use in summarizing the text as well as the steps which they follow to summarize the text.

Data Analysis

The analysis of raw data (see Table 3.2) in the study consists of think aloud protocols and interviews.

Analyzing the think aloud protocols. Think aloud protocols were the main source of data in this study. In fact, interviews, written summaries and scripts were the complementary sources of data. There were mainly four steps in analysis of protocols. Firstly, the adapted coding system was developed initially based on the Sarig's Summary Process Model (1993). The Sarig's Taxonomy of The Study-Composing Processes (1993) is included in the Appendices (Appendix H, p.335). Secondly, the raw data of protocols were transcribed. Thirdly, the transcribed protocols were segmented and finally the segmented protocols were coded to find out the metacognitive and cognitive strategies of the expository summary writing and the learners' shifts between these strategies.

Coding system think-aloud protocols. The coding scheme used in this study was adapted from Sarig's Summary Process Model (1993) which she developed with three major categories to analyze the think-aloud protocols, namely planning, assessing and Operating. The Sarig's Taxonomy of The Study-Composing Processes (1993) is included in the Appendices (Appendix H, p.335). As mentioned earlier, planning and assessing were metacognitive and operating strategies were

considered as cognitive strategies. It means that the researcher used planning and assessing to identify the metacognitive strategies and operating strategies for cognitive strategies. Each of these major categories was further distinguished into several writing behaviors or specific strategies. First, planning was subcategorized

Table 3.2

Research Questions and Qualitative Data Analyses of the Study

Research Question	Data Analysis
1. How do the ESL undergraduates shift between the metacognitive and cognitive strategies when they summarize the expository text?	• Analyzing the participants' shifts between the metacognitive and cognitive strategies when they summarize expository text based on the metacognitive and cognitive strategies. • Presenting the participants' shifts between strategies in a form of a model
2. What are the metacognitive strategies involved when ESL undergraduates summarize the expository text?	• Transcribing the participants 'think aloud protocols, semi- structured retrospective interview, summary scripts and summary drafts • Analyzing all the data to identify the metacognitive strategies used by the respondents • Assigning a code that describes each of the respondent's metacognitive strategies while summarizing the expository text • Identifying the most frequent type of metacognitive strategies used by respondents when summarizing the expository text
What are the cognitive strategies involved when ESL undergraduates summarize the expository text?	• Transcribing the participants' 'think aloud protocols, semi-structured retrospective interview, summary scripts and drafts • Analyzing all the data to identify the cognitive strategies used by the respondents • Assigning a code that describes each of the respondent's cognitive strategies while summarizing the expository text • Identifying the most frequent type of cognitive strategies used by respondents when summarizing the expository text

into two parts: goal setting, and strategy selecting. Second, assessing was distinguished into four subcategories such as: resource evaluation, source evaluation, process evaluation and product evaluation. Third, the category of operating was distinguished by subcategories of performing, clarifying, linking, transforming and revising. Furthermore, the planning also adopted some of the coding from Hayes and Nash (1996) and Yang and Shi (2003) which were divided into five categories: planning for organization, content, text format, a word or sentence choice and task requirement review. In addition, the researcher used Kintsch and van Dijk's model for analyzing the steps of summarizing the expository text. Two of three protocols randomly were selected to check inter-coder reliability. The researcher asked two TESL experts to assist for checking the codes. Table 3.3 show the inter inter-reliability for the main and subcategories.

Table 3.3

The Inter Rater Reliability for the Main Categories and Subcategories

	Inter-Rater Reliability for the Main Categories	Inter-Rater Reliability for the Subcategories
Expository Text	92%	89%

Interviews. As mentioned earlier, interviews play a significant role in data analysis after protocol analysis. The purposes of interview can be divided in two: first, interviews help the researcher to compare the analysis to other sources of data for confirming reliability of valid data. Second, it can assist the researcher in clarifying any vague information. In other words, the researcher asked the participants to explain some points which they wrote either on the summary writing drafts or on the scripts of the original summary text. Moreover, the participants

elicited the solution of students' problems during summarization of the expository text.

Credibility of Findings

Some specific strategies can be used for promoting credibility of findings. Merriam (2009, p. 215) and Wolcott (2005, p. 160) mentioned that these strategies "can be used to increase the credibility of your findings". In other words, credibility is a kind of test for internal validity to check to what extent "findings accurately describe reality" (Hopefl, 1997, p. 7). Moreover, Patton added that credibility depends more on the richness of the data and the researcher's analytical abilities than the sample size of the study. In general, triangulation, member checks and peer review were the strategies used in this study for boosting the credibility of findings.

Triangulation of data. Triangulation is the "most well-known strategy to shore up the credibility of a study" (Merriam, 2009, p. 215). In fact, triangulation is supporting of different sources of data on the same event or phenomenon (Kvale, 1996; Merriam, 2009; Patton, 2002; Strauss & Corbin, 1998; Vogt, 1993; Yin, 1992, 2003). In addition, triangulation can "strengthen a study by combining methods" (Patton, 2002, p. 247). Moreover, Caulley (2008) and Gliner (1994) inferred that triangulation is a "rigor" criterion of a qualitative research. In other words, triangulation helps the researcher to measure the accuracy of the research findings. Two researchers (Denzin, 1987; Patton, 1987, 1990, 2002) categorized triangulations into four types. The first one is data triangulation which the researcher uses different sources of data such as interview, think-aloud protocols, document analysis or observation. The second one is investigator triangulation in which several researchers are involved in the same study. The third one is theory triangulation in which the investigator uses multiple theories to interpret one set of data. And methodological

triangulation is the last one, in which the researcher uses several methods to study a single problem.

Despite the fact that collection of multiple sources of data is improving the credibility of research, at the same time, it burdens the researcher for two reasons. The first one is the cost of data collected through multiple sources of data (Denzin, 1978; Patton 2002; Yin, 2002). In other words, doing research based on multiple sources of data rather than single source data collection is expensive. The second and more important reason is a trained researcher who needs to know how to carry out all the data collection techniques (Denzin 1978; Yin, 2002). According to Yin (2002), if any of these techniques is used improperly, the opportunity to address the broader issues may be lost. Golafshani (2003) explains that although triangulation includes multiple sources of data collection and data analysis, it is not guaranteed for all the research methods. In other words, the methods chosen for triangulation depend on the research criterion. In this study, the findings were triangulated from different source of data such as interview; think-aloud protocols and summary scripts and summary drafts. Since the objectives of the current study is to find out the metacognitive and cognitive strategies and the interactions between them, it i necessary to look at the different sources of data to get the accurate result in the study. For instance, analysis of think aloud protocols, interview questions, original summary scripts and the students' summary for three research questions were all helped the researcher to interpret the participant's behavior and use of strategies during summarizing the expository text. To support this approach, there are different studies on metacognitive studies on listening and summary writing that used dta triangulation in their studies (Merchie & Keer, 2016; Nowitzki & Berthold, 2017 ; Vandergrift and Goh ,2012; Roelle et al. 2017).

Member checks. According to Merriam (2009), member checking is a common strategy for ensuring credibility. Merriam (2009) defines member checks as interviewees' feedback on the researcher's emerging findings. Maxwell (2005, p. 111) describes member checks as a "single most important way of ruling out the possibility of misinterpreting the meaning of what participants say and do and the perspective they have on what is going on, as well as being an important way of identifying your own biases and misunderstanding of what you observed". The process in member checks is taking the preliminary analysis back to some of the participants and asking whether you interpreted the data accurately (Merriam, 2009). Moreover, Sandelowski and Borroso (2007) mention that member check plays a significant role in improving credibility and dependability of study findings. In this study, the researcher took back the analysis of the think aloud protocols and interviews and asked the participants some questions based on the data interpretation.

Peer review. In peer review or peer scrutiny, the researcher discusses with colleagues the research concepts such as process of study, the congruency of emerging data with raw data, and tentative interpretations (Merriam, 2009). Sandelowski and Borroso (2007) added that peer review is one of the important strategies for maximizing the validity and reliability of findings. Patton (2002) highlights that the rigor of qualitative techniques depends on peer review. In other words, peer review is a key mechanism of "theoretical and pragmatic" validity of a qualitative research (Sandelowski, 1998a, 1998b; Sandelowski & Borroso, 2007). The researcher in this study had several discussions with her classmates and colleagues who were experts in the field. The discussions mainly were on the emerging data and their interpretation. Actually, the discussion was very useful and helped the researcher to analyze and interpret the data precisely.

Transferability . Transferability or external validity is the other aspect of the research which should be taken into account. According to Merriam (2009), transferability is "concerned with the extent to which the findings of one study can be applied to other situations". She added that one of the common strategies to increase the possibility of a qualitative study "transforming" to another setting is rich thick description. This description includes the detailed explanation of the setting, participants and findings with "adequate evidence presented in the form of quotes from participant interviews, field notes and documents" (Merriam, 2009, p. 227). In other words, external validity in qualitative research defines the transferability which refers to the extent to which the findings of one study in a particular setting are transferable to other settings. In the current study, the researcher checked the transferability as well. The researcher actually asked several questions in the interview about applying the same metacognitive and cognitive strategies to other genre and the students explained that they would use the same strategies if they were given different genre of the text.

Chapter Summary

This chapter outlines the method and research design employed in this study. Among 32 selected participants of the current study, five ESL students completed the data collection sessions. They were sophomores and juniors in the Faculty of Education, from one of the major universities in Kuala Lumpur. The study employed a basic qualitative research design. The data were collected through the think aloud protocols as the main source of data and interviews, written summary and original summary scripts as the complementary sources of data to understand and get the learners' metacognitive and cognitive strategies of the compare and contrast expository text and find out the participants' shift between the metacognitive and

cognitive strategies. The data of think aloud protocols along with other sources of data were mainly analyzed based on Sarig's Summary Process Model (1993) and the result were presented in the next chapter.

Chapter 4 Data Analysis and Results

Introduction

The aim of this chapter is to present the findings of the study with respect to the research questions introduced in Chapter One. The first research question of the study concerned the shifts between metacognitive and cognitive strategies when ESL undergraduates summarize the expository text. The second and third research questions intended to find out the metacognitive and cognitive strategies used respectively in summarizing the expository text by ESL learners. The data are presented according to the research questions. It is worthwhile to mention that the organization of research questions of the current study was organized based on the "top-down" or wholistic aspect. It means that the researcher, firstly, looked at the metacognitive strategies, the planning part of reading and writing. Secondly, she showed the actions after planning, which was the reading and writing individually and finally, the interactions between them. Therefore, the study designed to start from a very wholistic picture to the very detailed view of the metacognitive cognitive strategies and shifts between them. Furthermore, it is important to highlight the term "shift" was chosen to show not only the interactions between the strategies of each concepts of metacognitive and cognitive concepts per se, but also the movement and transition of each strategy within three concepts of metacognitive and cognitive which are planning, operating and assessing. Therefore, the word "shift" could be the best choice for the description of moves in the current study. The alternative terms like "moves" and "interactions" are used interchangeably to avoid repetition of words in the description of analysis.

Analysis of the Data for Research Question 1

While the data analysis process for Research Question 1 was bottom-up, the presentation of the data is top-down. Thus, the organization of Research Question 1 has adopted a top-down approach; from the main model of summarizing to the details and description of components of moves of metacognitive and cognitive strategies Therefore, the researcher followed Sarig's study (1993) and chose to start from "whole to parts"; providing a "big picture" of the analysis at the beginning and describing and exemplifying the results later. Figure 4.1 and Figure 4.2 presented two aspects of this study with the same components. In details, Figure 4.1 showed the data presentation (top-down) and Figure 4.2 presented the analysis (bottom-up) of this study with the same component. Specifically, in top-down view, as shown in Figure 4.1, the organization of the content of the Research Question 1 was shown. In bottom-up view, as shown in Figure 4.2, the hierarchical steps of analyzing the data and developing the recursive-interactive summarizing processing model were presented.
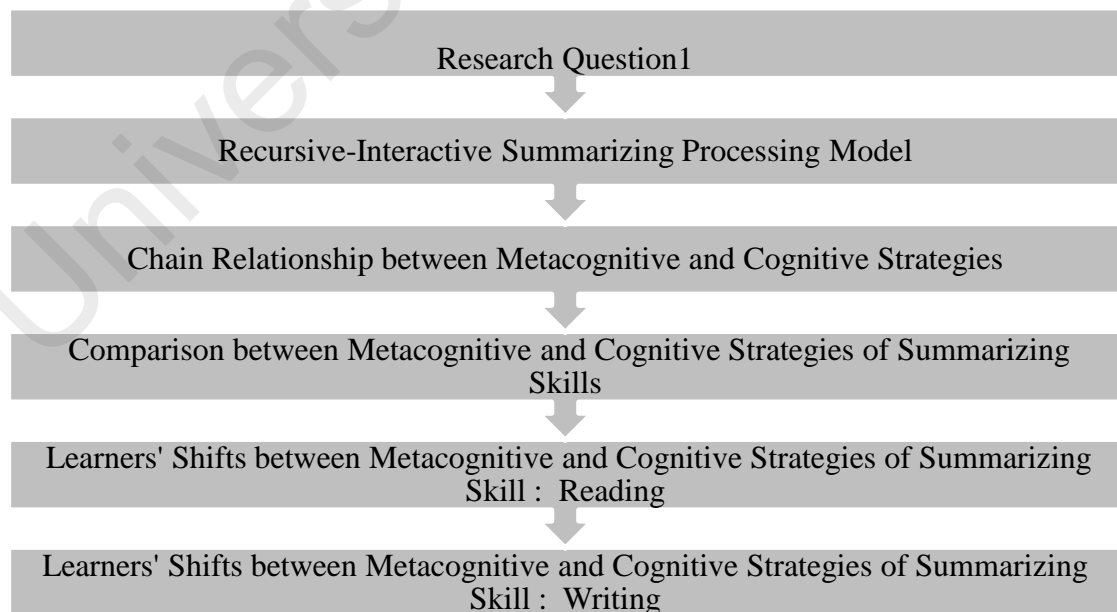
Figure 4. 1. The organization of the content of Research Question 1

Research Question1

↑

Recursive-Interactive Summarizing Processing Model

↑

Chain Relationship between Metacognitive and Cognitive Strategies

↑

Comparison between Metacognitive and Cognitive Strategies of Summarizing Skills

↑

Learners' Shifts between Metacognitive and Cognitive Strategies of Summarizing Skill: Reading

↑

Learners' Shifts between Metacognitive and Cognitive Strategies of Summarizing Skill: Writing

Figure 4.2. The steps of analysis of Research Question 1

With reference to Figure 4.1 from the top-down view, the presentation of the data was divided into five parts. In the first part, the learner's shifts between metacognitive and cognitive strategies will be presented in a recursive-interactive summarizing model. Also, in this part, the relationships of learners' metacognitive and cognitive strategies in reading and writing will be provided. In the second part, the chain relationships of learners' metacognitive and cognitive strategies of reading and writing will be shown. In the third part, the comparison between the metacognitive and cognitive strategies in reading and writing will be presented. And finally, in the last two parts, the metacognitive and cognitive strategies in reading and writing will be discussed respectively. Therefore, the learners' shifts between metacognitive and cognitive strategies will be shown in a recursive-interactive summarizing model in the next section.

Clarification of main issues of data analysis. It is very important that the researcher highlights some main points in this chapter and clarifies the sequence of analysis of data to avoid any confusion. One may ask why the Recursive-Interactive

Summarizing Processing Model suddenly appeared at the beginning section of Research Question 1 with some general explanation of the model which are not clear; how it developed, or which data was used and where the actual data of the participants were. Another reader of this study may be wondered why the presentation of data was not presented as the same steps of analysis. Why did Figure 4.1 not appear to be cycles? What are the differences between interaction, shifts and moves that were used in the analysis? To answer all these questions, the reader should consider the sequence of analysis, the way the data presented and the models and terms are used in the explanation.

First, Figure 4.1 and 4.2 are presented here to show what the top-down and bottom-up process for data presentation and data analysis look like for clear picture. They are not intended to be cycles; they just show a picture of how the researcher analysed the data and present them in this chapter.

Second, as mentioned earlier, the terms "shift", "move" and "interactions" have basically the same meaning in this study and they used interchangeably to avoid repetition of the term in the explanation of the analysis.

Third, Recursive-Interactive Summarizing Processing Model of the current study is not presented without any evidence. This model, indeed, is well developed based on the bottom-up approach from all sources of data (pp.81-135). That is why the researcher insisted on the top-down presentation of data. It means that, if readers consider the headings of each section backward (pp. 81, 86, 88 & 92), they will understand that the Summarizing Processing Model of the current study is constructed from very specific shifts between reading (pp.104-135) and writing (pp.135-174) to the final model of Recursive-Interactive Summarizing Processing

Model (p.81-86). Therefore, all the data is presented in previous sections (pp. 81-135).

Fourth, the researcher chose a top-down approach to make the data presentation more interesting. It looks like a flashback from the end to the beginning. In this respect, other studies used the same way to present their data (Merchie & Van Keer, 2016, Oz, 2016 & Sarig, 1993). Therefore, in this section it is vital to explain how the data analysed before any confusion.

The data analysis for the current study was based on bottom–up approach. It means that based on the analysis of the think aloud protocol, semi-structured interview, original summary scripts and the students' summary drafts, the shifts between metacognitive strategies an cognitive strategies were identified and compared by using Sarig's Taxonomy of the Study-Composing Processes (1993)

(Appendix H, p. 335) as a guideline. The researcher presented the detailed explanation for the shifts in reading (pp. 104-135) and writing (pp. 135-174) separately and explained them based on the students' data. After that, the learner's shifts between the metacognitive and the cognitive knowledge in reading and writing were compared (refer to page 92). After this step, it was time to show theses shifts and interactions in a shape of repeated cycles Therefore the researcher showed a figurative chain relationship of shifts based on the analysis of all sources of data on page 88. After that, the relationships of the shifts between metacognitive and cognitive strategies were developed based on the Sarig's Recursive-Interactive Summarizing Processing Model (1993) (refer to pp. 86-88). In this stage, it was very important to show how the shifts are recursive based on the analysis in the previous sections as it was explained earlier. Finally, the recursive-interactive summarizing

processing model based on the analysis of the relationships of shifts was shaped and the unique model of Recursive-Interactive Summarizing Processing Model was developed (refer to pp. 81-86). Therefore, by reading all the sections which mentioned earlier, this model shows the various interactions between metacognitive and cognitive strategies if the summary processes which comprised of reading and writing.

Fifth, since the current study study is used the basic qualitative approach, the researcher used less statistical data and she used more explanation and interepretation of the data analysis.Therefore, the figures and Tables were comprised of chain relations ship, recycle and recurviseness of the metacognitive and cognitive startegies.Thus, the researcher tried to put the clear picture of all the interactions in different diagrams and figures to facilitate readers to undertandstand the content perfectly.

Finally, It is worthwhile to mention that the analysis of data for each participant in different sections were based on all sources of data.The original summary scripts, the participant's summary draft along with think aloud protocol analysis helped the researcher to identify the metacognitive and cognitive strategies and understand the shifts between them. Moreover, the interview data analysis also supported the preliminary source of data for reliable result of the analysis. The interviews of participants are presented in this chapter within the explanation of excerpts of participants in different sections (pp.104-135, pp.135-174, pp. 178-194 & pp.194-208).

Research Question1: How do The ESL undergraduates shift between the metacognitive and cognitive strategies when they summarize expository text?

The ESL undergraduates' shifts between metacognitive and cognitive strategies were identified based on the analysis of in-depth think aloud protocols, students' summary scripts, their summary drafts and the semi-structured interviews of the five ESL undergraduates referred to by their pseudonyms names: Mona, Nisa, Myra, Hana, Aida (for the profile of the participants, see Chapter 3, p. 56).

The findings revealed four main features about the relationship between the metacognitive and cognitive strategies. Firstly, the result showed that the participants basically used the same summarizing processes investigated by Kintsch and van Dijk (1978) in using the metacognitive and the cognitive strategies such as reading the original summarizing text, selecting the main ideas, writing the actual summary and revising the final draft. In addition, the adopted metacognitive and cognitive strategies in summary writing were used in a recursive manner. For instance, the metacognitive and cognitive strategies moved cyclically between each other. Moreover, in the recursive movement between metacognitive and cognitive strategies, the strategies constantly interrupted each other. In other words, each strategy of metacognitive and cognitive was replaced by another strategy. Finally, the relationships between moves were dynamic. It means that the replacement of strategies in the summarizing system was fast and continuous and that is the reason for the dynamic moves between strategies.

Recursive-interactive summarizing processing model.　　Figure 4.3 shows the current model of the study which was derived from the five hierarchical steps, in Figure 4.2, of the in-depth analysis of the learner's think aloud protocols,

participants' summary scripts, students' summary drafts and semi structured interviews during summarizing.

As mentioned before, while the process of data analysis was bottom-up, the presentation of the data was top-down in order to provide the findings from a big picture to the detailed information. Therefore, as shown in Figure 4.2, in the first two parts from the bottom to the top, the moves between the metacognitive and the cognitive strategies of reading and writing were identified and compared. Then, the learner's interactions between the metacognitive and the cognitive knowledge in reading and writing were compared. After that, the chain of relationship of the metacognitive and the cognitive strategies was investigated. Finally the recursive-interactive summarizing processing model including the relationship between the metacognitive and the cognitive strategies was developed.

With reference to Figure 4.3, the main components of the strategies are *planning* and *assessing* for the metacognitive strategies and *operating* for the cognitive strategies. Each of the strategies is described in detail in Research Question 2 and Research Question 3. However, the focus of Research Question 1 is to provide a broad overview of interactions between metacognitive and cognitive strategies.

Each component of the strategies belongs to the independent *system processor* in the *summarizing processing system* in the learners' mind during summarization. It means that, in the learners' minds, certain components are responsible for summarizing. Since each component as an agent has a certain task to process the summarizing, it is called processor in the current study. The processors are such as *planning, operating* and *assessing*. Furthermore, the organization or
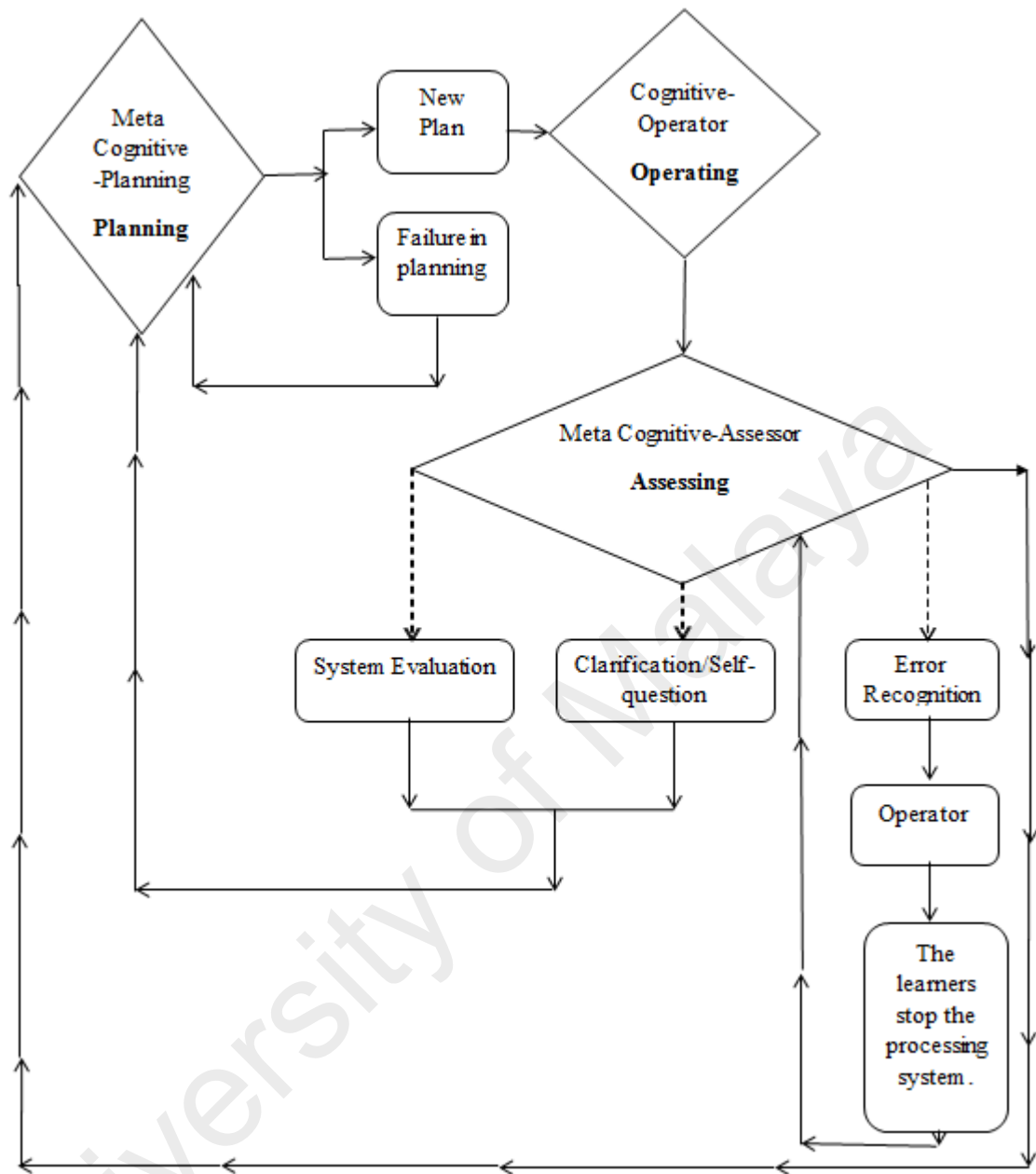
Figure 4.3. Recursive-interactive summarizing processing model

system which contains the summarizing components or processors is metaphorically called the summarizing processing system in this study.Hence, the components are like system processors and the whole organization containing the components are similar to the summarizing processing system. Therefore planning and assessing strategies belong to the *planning and assessing* and operating strategies belong to the *operating* in the summarizing processing system.

In order to show the results clearly, in the processing of a text, the learners' shifts between the metacognitive and the cognitive strategies are considered in the series of cycle rounds: the learners' mental activities going on between the metacognitive and cognitive strategies. It means that the participants summarized the material and used different metacognitive and cognitive strategies in a single "chunk". The chunks are either a sentence or a paragraph. The most important point in each chunk is the learners' use of both metacognitive and cognitive strategies.

Basically, there are two aspects of the recursive-interactive summarizing processing model. The first aspect focuses on the detailed functions and the second aspect emphasizes the relationship between the metacognitive and cognitive strategies in the summarizing processing system. The current model in Figure 4.3 is called recursive-interactive because the moves between metacognitive and cognitive strategies are cyclic in a way that the learners in each processor change their role in running the summarizing processing system. For instance, the learners start the summarizing processing from the planning, move to the operating and complete the cycle in the assessing system.

Actually, Sarig (1989) developed the model of the comprehension promotion strategies in the reading skill which she called it "Corrective-Interactive Text Processing System". The name of the current model of the summarizing in this study was idealized from Sarig's study with different aspect. .In fact, Sarig's study was corrective-interactive, focused on the learner's error correction in a cyclic manner of reading comprehension strategies.

Mainly, the learners play significant roles in two levels of macro-structure and micro-structure in the summarizing processing system. This means that in the macro structure, the main responsibility of the learners in the planning, assessing and

operating systems is to control and monitor the whole process of text processing in summarizing.

In the micro-structure, the learners in each component of processing system have certain tasks. In specific, the learners select appropriate goals and strategies in the planning system. Then, in the operating system, the learners follow the commands of either the planning system to implement the changes or the assessing system to continue the processing. And finally, in the assessing system, the learners control and monitor the quality of the processing system.

In fact, the implementation of metacognitive and cognitive strategies depends on the learners' roles in the interactions going on between each of the sub-components of the planning and the assessing systems on one hand and the operating system on the other hand. That is why the learners' shifts between cognitive and metacognitive strategies in summarizing are recursive and dynamic.

With reference to Figure 4.3, in the summarizing processing system, the learners initiate summarizing with the *planning system*. In the planning system, the participants set goals and strategies. Actually, as Figure 4.3 reveals, there are two possibilities for the learners in the planning system to initiate the summarizing system.

In the first possibility, in the *planning system* if the learners are able to provide the new strategies or goals, as Figure 4.3 reveals, they will move to the *operating system*. Then in the operating system, the learners receive their tasks from the planning system and implement the new strategies.

In the second possibility, if the learners are unsuccessful in providing the strategies and goal setting, the system will return back to the planning and the learners will select another set of strategies or goals. After selecting the appropriate

strategies or goals, the learners move to the operating system to implement the strategies.

After the learners implement the strategies in the operating system, they move to the *assessing system*. Basically, there are three possibilities of learner's roles in the assessing system. First, if the learners implement the strategies perfectly in the operating system, they will evaluate their strategies in the assessing system and they continue moving cyclically to the planning system to start the new cycle.

Second, if the learners clarify the content and structure of the text or make self –questions, the learners will assess the quality of the text and the processes and therefore they move recursively to the planning system to select other strategies.

Third, if the learners make mistakes during summarization, they immediately will interrupt the strategy implication in the operating system. Then they move cyclically to planning system to correct their mistakes or errors by changing the goals or strategies.

In fact, the function of the summarizing processing system is very dynamic, recursive and complex. After completion of each cycle; the learners set goals and strategies in the planning, implement the strategies in the operating and evaluate the quality of their summarizing in the assessing system.

Relationship between metacognitive and cognitive strategies. In Figure 4.4, the directions of the interactions of metacognitive and cognitive strategies are shown. As mentioned earlier, the learners initiate the summarizing processing with planning, continue with operating and complete it with the assessing.

According to Figure 4.4, there is a one way direction always from the planning to the operating and from the assessing to the planning. Significantly, the findings of the current study depart from Sarig (1993) in the interaction moves

between the planning, the operating and the assessing. Specifically, based on Sarig's Composing-Summary Model (1993), there are always two directions within components of summarizing. It means that there are two directions from the planning to the operating to the assessing.
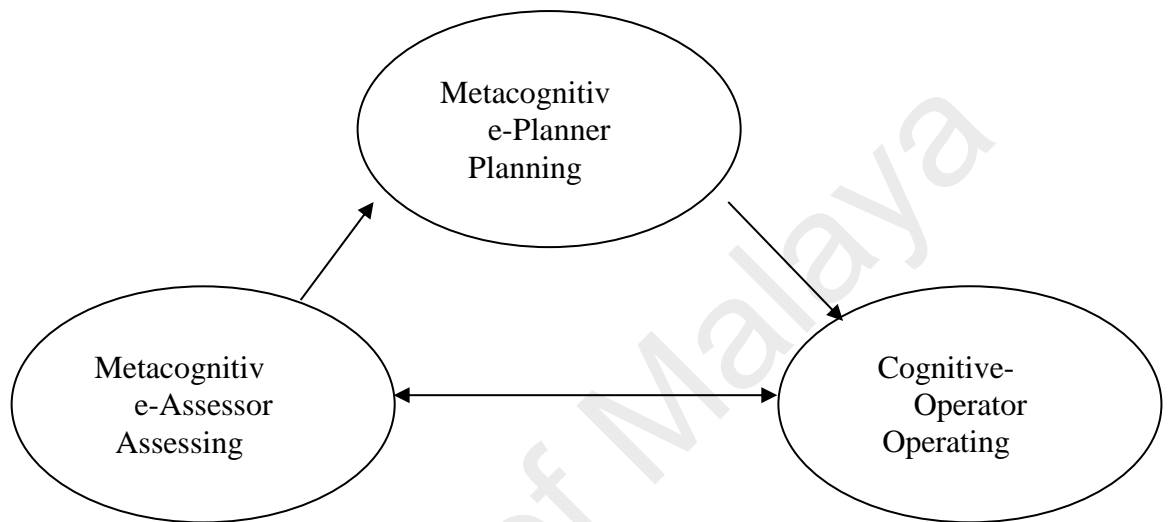
Figure 4.4. Relationship between metacognitive and cognitive strategies

In contrast, the findings of this study (Figure 4.4) show that there is no direct interaction from the operating to the planning and from the planning to the assessing in the regular processing. The reason is that the learners in the operating system are not able to interact directly with the planning system as the learners in the operating system receive tasks from either the planning or the assessing.

For the rationale for the lack of direct interaction of the planning to the assessing, it can be said that there is only one component, operating system, which implements strategies. Therefore, in all cases, the learners receive the tasks from the planning system and perform the task in the operating system. Hence, there is no possibility that the learners in this study move from planning to the assessing.

Furthermore, in the assessing system, the learners evaluate the whole summarizing processes after completion of the strategies not before. It means that the learners are unable to evaluate the strategies and goals before they are implemented in the operating system. Therefore, there is no direct way that the planning interacts directly with the assessing system; rather the planning has the interaction with the assessing through the operating system.

Actually, the learners evaluate all the processes, products, goals, strategies and the content of the source text in the assessing system after implementing the strategies. Therefore, their roles in the assessing system are very significant in the interaction of the metacognitive and cognitive strategies in summarizing.

As shown in Figure 4.4, the interactions between metacognitive and cognitive strategies in the summarizing processing system are recursive, interactive and dynamic. In fact, the learners in the system of the summarizing processing need all three components of strategies, with different functions, to monitor and control the summarizing processing system perfectly. In order to show the details of developing the summarizing model, the relationship of metacognitive and cognitive strategies will be presented in a shape of "chain relationship" in the next section.

Chain relationship between metacognitive and cognitive strategies of summarizing. In order to provide the details of the development of the summarizing processing model, the chain relationship between metacognitive (the planning and the assessing) and the cognitive (the operating) strategies will be explained in this part.

The summarizing processing model was initially constructed based on the general picture of the learners' shifts in the interactions of the metacognitive and the cognitive strategies which is called "chain relationship" in this study. Actually, in

summarizing, the metacognitive processors and the cognitive processor are connected like chain processes.

Accordingly, the chain relationship figures were also generalized based on the specific interactions between the metacognitive and the cognitive strategies of different chunks or parts of the learners' think aloud protocol in summarizing. To be more specific, at the beginning of the analysis, the data were divided in to different segments or parts which in this study are called "chunks." Each chunk of data was analyzed based on the learners' shift in the interactions between the metacognitive and the cognitive strategies and the shifts were generalized in the form of chain relationship in order to show the trend of dynamic interactions between the learner's shifts in metacognitive and cognitive strategies. Therefore, from the chain relationship, the summary processing model is developed. The current chain relationship figures which are shown in Figure 4.4 and Figure 4.5 were the "big picture" of the learners' moves between metacognitive and cognitive strategies. Based on the learners' interactions between the metacognitive (the planning and the assessing) and the cognitive (the operating) strategies, there are four chain relationship possibilities in the summarizing processing system. The four types of chain relationship possibilities are such as regular, clarification, error recognition and interruption respectively.

To present the interactions in Figure 4.5, Figure 4.6 and Figure 4.7, the abbreviation of P for the planning, O for operating, A for the assessing, MCP for the metacognitive –planning, and CO for cognitive –operating and MCA for the metacognitive assessing strategies were used in the current study. The data analysis revealed four chain relationship possibilities which are explained separately in this part.

In order to show clearly the chain concepts, two figures for each possibility are presented in Figure 4.5, Figure 4.6 and Figure 4.7 in which the first one is for the processors (planning, operating and assessing) and the second one, with the same trend, is for the cognitive and metacognitive strategies. The rationale of bringing two figures with the same concepts in each possibility is to identify clearly which processor belongs to which strategy.

P-O-A-P-O-A-P-O-A- P-O-A-P-O-A-P-O-A-P-O-A-P-O-A-P-O-A P-O-A-P-O-A-P-O-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-MCA

Figure 4.5. Chain relationship between cognitive and metacognitive processors-regular and clarification processing

P-O-**A-O-A**-P-O-A- P-O-A-P-O-A-P-O-**A O-A**-P-O-A-P-O-A P-**O-A-O**-A-P-O-A MCP-CO-**MCA-CO-MCA**-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-**MCA-CO-MCA**-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-**MCA- CO-MCA-**MCP-CO-MCA

Figure 4.6. Chain relationship between cognitive and metacognitive processors-error recognition processing

P-O-P-O-A-P-O-A- P-O-A-**P-O-P**-O-A-P-O-A-**P-O-P**-O-A-P-O-A-P-O-A-P-O-A **MCP-CO-MP**-CO-MCA-MCP-CO-MCA- MCP-CO-MCA- **MCP-CO-MP**-CO-MCA-MCPCO-MCA-**MCP-CO-MCP**-CO-MCA-MCP-CO-MCA-MCP-CO-MCA-MCP-CO-MCA

Figure 4.7. Chain relationship between cognitive and metacognitive processors-interruption processing

For instance, the other form of (P_O_A),P(planning)-O(operating)-A(assessing), is also shown in the form of MCP-CO.MCA, Metacognitive planning, cognitive operating and metacognitive assessing to show that planning belongs to the metacognitive, operating to the cognitive strategies and the assessing to the metacognitive strategies.

According to Figure 4.5, the first possibility is in the regular processing cycle. In this case, the learners in the planning initiate the system and set the goals and select the strategies. Then the learners in the operating implement the planning commands and finally the participants in the assessing evaluate their summarizing (P-O-A or MCP-CO-MCA). If there is no error, no clarification and no interruption in the summarizing system, the learners continue summarizing and the processing system is going on recursively which is shown clearly in Figure 4.4.

The second part is the clarification. In detail, if the learners clarify the content during summarizing, the chain is still the same as the regular chain in Figure 4.5. However, in the regular processing, the learners in the assessing evaluate their previous summarizing performance which takes place in the operating. Meaning that the direction of the chain is from the assessing to the operating. However, in the clarification, the learners in the operating get help from the assessing; specifically the direction of chain is from the operating to the assessing.

The third part is the error recognition. In error recognition, the learners in the planning initiate the system to select strategies and set goals. Then, they move to the operating system to implement the strategies (P-O). At this point, the learners recognize mistakes in their summarizing performance. Therefore, they pause their summarizing and they stop the operating system because of error recognition (A-O-A). After that ,the learners move to the planning to correct the mistake by providing a

new strategy or goal and then the system of summarizing is continued in the regular processing (P-O-A). Therefore, the arrangement of the chain relationship is P-**O-A-O**-A/MCA-CO-MCA. In other words, in any error recognition, the learner's performance in the operating system, as the cognitive strategy, is monitored and controlled by the assessing, as the metacognitive strategy.

The final possibility about the chain relationship is the failure of the learners' planning which lead to an interruption in the system. In the interruption processing, the learners in the planning system initiate the system. However, due to their inability to provide the new plan, the summarizing system stops (P-O/MCP-CO) and the learners pause their summarizing. After a while, the participants skip the text which they are unable to summarize and they move to the other part of the text to start the new cycle which is shown in Figure 4.7.

As can be seen, different types of the chain relationship show the learners' shifts between metacognitive and cognitive strategies in different situations. As mentioned earlier, the chain relationship was driven from the specific interactions between metacognitive and cognitive strategies. Accordingly, these specific interactions were formed from comparison between metacognitive and cognitive strategies of summarizing skills in reading and writing which will be discussed in the next section.

Comparison of the metacognitive and cognitive strategies of summarizing skills: reading and writing. In order to develop the models of summarizing processing and the chain relationship figures in this study, summarizing skills were divided into reading and writing based on the previous studies. According to the literature review, summarizing task consists of reading and writing which are intimately interrelated and there is a strong relationship between them (Brown &

Smiley, 1978; Cohen, 1994; Hidi & Anderson, 1986; Johnson, 1983; Kintsch, 1990; Kirkland & Saunders, 1991; Yu, 2007). Therefore, the initial analysis of the think aloud protocols was focused on the learners' moves between the metacognitive and the cognitive strategies of reading and writing in summarizing the text. After that, the learners' shifts between the metacognitive and the cognitive strategies of reading and writing were compared and finally the similarities between the learners' interactions between the metacognitive and the cognitive strategies of reading and writing were investigated to make a chain relationship and the summarizing processing model. However, the differences were significant and it is explained in detail in this section.

Based on the analysis of the learner's think aloud protocols and the interviews, in reading, the participants read the original text, comprehended the content and selected the main points whereas in writing, the participants wrote the actual draft of summary text and revised their drafts. Thus, totally, five steps of processes were taken in summarizing: read, comprehend, select, write and revise which were in line with the Kintsch and van Dijk processes (1978).

The comparison of the learners' interactions between the metacognitive and cognitive strategies in reading and writing were organized into three parts. First, the similarities of reading and writing processing are explained based on the types of processing such as regular, clarification, interruption and error recognition. Second, the differences of reading and writing processing based on the number of the processing cycles namely clarification and error recognition are presented. And finally the differences of the number of occurrences of summarizing processing cycles in reading and writing are discussed.

There were certain rules of the learners' interactions between the metacognitive and the cognitive strategies which were similar in both reading and

writing based on the types of processing, namely regular, clarification, interruption and error recognition.

In the regular processing in both reading and writing, the learners set goals and select strategies in the planning system, then implement the strategies and goals in the operating system and finally evaluate their performance in the assessing system (planning-operating-assessing). Therefore, the learners initiate a well-functioned summarizing processing in the planning system and complete it in the assessing system.

In the clarification processing, in both reading and writing, any time the learners in the operating system clarify the content during summarizing, they get help from the assessing system for evaluation and the new plan. After that, the learners in the assessing system evaluate their summarizing processes and move to the planning system for the other strategy or goal to confirm or correct the clarification. And finally the learners continue summarizing in the recursive summarizing system by moving to the operating and then the assessing system (operating-assessing/assessing-planning/planning-operating-assessing).

In the interruption processing, the learners are unable to plan successfully because they lack enough strategy knowledge. Devine (1993) referred to this kind of knowledge as one of the metacognitive knowledge called declarative knowledge of strategy. In fact, when there is lack of metacognitive knowledge of strategy, the participant are unable to select strategies or set goals successfully. Therefore, if the learners in the planning are not successful in providing new strategies in both reading and writing, they stop the operating system (~~planning-operating~~). Based on the analysis of think aloud protocols, different learners interrupted the operating system in both reading and writing.

Finally, in the error recognition processing, the learners identify their mistakes and they stop the operating by pausing their summarizing. At this time, the learners in the operating system get help from the assessing system to evaluate their performance and correct their mistakes. Therefore, the learners move to the assessing system, evaluate the summarizing processes and move to the planning system for the new plan in order to correct their mistakes. After moving to the planning system, the learners shift to the operating and then to the assessing system in the regular processing (assessing-operating/assessing-planning/planning-operating-assessing).

The similarities of the learners' shifts between the metacognitive and the cognitive strategies in reading and writing were significant. Accordingly, the differences of the learners' interactions between metacognitive and cognitive strategies in reading and writing are important.

Differences between the learners' interactions between metacognitive and cognitive in reading and writing were organized according to two main points. The first part is the differences of the learners' interactions between metacognitive and cognitive strategies in reading and writing based on the numbers of the processing types of clarification and error recognition. The second part focuses on the differences of the number of occurrences of processing cycles of the learners' interactions between metacognitive and cognitive strategies in both reading and writing.

In this part, the differences between the number of the processing types of the learners' interactions between metacognitive and cognitive strategies in reading and writing are discussed. Basically, the number of the learner's interaction cycles in error recognition and clarification between the metacognitive and the cognitive strategies are different in reading and writing. In reading, the number of the learners'

interaction cycles between the metacognitive and cognitive strategies cycles in clarification is more than in error recognition. It means that the learners' clarification of the sentence (operating-assessing/assessing-planning/planning-operating-assessing) in the cycles of processing in reading are more dominant rather than their error recognition (assessing-operating/assessing-planning/planning-operating-assessing).The explanation of the learners' clarification in reading could be due to the challenge of the comprehension of the source text. In fact, the learners clarify the content to understand the text and later to select the main ideas. Therefore, the roles of the learners in the assessing system are more significant in the clarification and evaluation of the system rather than the error recognition.

On the other hand, in writing, the number of the learners' interaction cycles between the metacognitive and cognitive strategies in error-recognition and clarification are unpredictable. Meaning that, sometimes, the numbers of cycles of the clarification and error recognition are almost the same, sometimes the number of the learners' clarification is more than the learners' error recognition and vice versa and sometimes there is only the learners' clarification in the cycles without any error recognition. Although the numbers of the learners' interaction in the error-recognition and the clarification are unpredictable, the learners change their roles in error recognition and clarification interchangeably.

Basically, in summarizing which is comprised of reading and writing, the learners in the assessing system, beside the evaluation of their summarizing, have two other responsibilities such as identifying their mistakes and clarifying the content during summarization. In specific, the learners in the error recognition are responsible for the evaluation of content, sentence structure or the whole process of summarizing. On the other hand, the learners in the clarification are responsible for

paraphrasing, checking for the correct selection of main points, comprehending of certain words in the text and finally editing their actual summary drafts. Therefore, in the assessing system, the learners have different tasks in both error recognition and clarification in which their numbers of the interaction cycles are not predictable in writing.

Finally, in writing, it is rarely possible that the learners identify their mistakes without clarification in a single cycle of interaction between the metacognitive and the cognitive strategies. Most of the time, when the learners identify the errors in the summarizing processing system, they clarify the summarizing process and the content as well.

In this part, the differences in the number of occurrences of processing cycles in the learners' interactions of metacognitive and cognitive strategies in reading and writing are presented. Mainly, the total number of occurrences of the summarizing processing cycles in the learners' interactions between the metacognitive and the cognitive strategies in reading is less than in writing. It means that the number of the regular, the learners' clarification and the error recognition processing of each chunk in reading is less than in writing.

In specific, after the learners clarify the content or they identify their mistakes during summarization, the learners start the regular processing cycles. The number of total cycles from the clarification or the error recognition to the regular is from one to three cycles in reading and from four to nineteen cycles in writing. Therefore, the number of cycles in writing is much more than in reading. This does not depart from the previous studies (Bialystok & Ryan, 1985; Devine, 1993) stated that metacognitive knowledge of writing demanded more analysis than for reading.

The similarities and the differences between metacognitive and cognitive strategies in reading and writing are very important in the structure of the summarizing processing model and the chain relationship. In fact, the similarities and the differences between metacognitive and cognitive strategies in reading and writing were analyzed based on the each chunk in reading and writing separately. In the next section, the details of reading and writing's interactions between metacognitive and cognitive strategies will be discussed and exemplified by presenting excerpts of the data.

Organization of the data presentation. The findings of the study will be presented here based on the learners' summarizing steps which were mainly analyzed based on the Kintsch and van Dijk's processes (1978). The steps are basically four which are reading and comprehending the original summary text, selecting of the main points in reading, writing the summary drafts and revising their actual drafts. In each excerpt of the data the learners' interactions between the metacognitive and cognitive strategies were discussed. The general participant's summarizing strategies were explained in different steps of summarizing in the next part.

Overview shifts between metacognitive and cognitive strategies for the individual learners. The researcher explained the learners' shifts between the metacognitive and cognitive strategies individually in this section in order to provide a general view of the participants' shifts between the strategies and the steps they took while summarizing the expository text. The ESL undergraduates namely, Mona, Nisa, Myra, Hana and Aida used different strategies and shifts which the researcher discussed about and compared with each other respectively.

Mona read the original text from the beginning to the end three times, tried to select the main points and wrote very few words in the margin and underlined the

main points of a few paragraphs. After that, she started to write the draft. Interestingly, she copied several words and even the sentences could be due to her lack of vocabulary or poor English proficiency. Furthermore, from her draft and think aloud, it was clear that she edited the draft while she was writing each sentence. However, the editing was not for all sentences and she did not have any final editing after completing the summary.

Nisa read the text paragraph by paragraph, then she tried to underline the difficult vocabulary in the source text, paragraph by paragraph and at the same time, she selected the main points. Surprisingly, compared to other participants, Nisa had the most errors in reading. Her concentration was more on the content rather than the correct reading of the original text. After that, she started to write the draft in the second time and in the third time, she read the draft and edited it. For the final part, she read the draft quickly without any editing. Moreover, Nisa had more clarification problems in her think aloud than making mistakes. In most of her sentences, she was unsure about the correct selection of main points or choice of vocabulary. This was due to the challenge of summarizing in selecting the main points in the summarizing and lack of declarative knowledge (lack of enough strategy knowledge) in the metacognitive knowledge category.

Myra, like Mona, read the text from the beginning to the end for the first time. Then she, like Nisa, started to read the source text, paragraph by paragraph and interestingly she wrote main ideas by putting numbers in the margin next to each paragraph. In fact, she tried to select the main ideas in the text, paraphrase them and write in the margin. However, sometimes, she copied some vocabulary from the original text in the main points. After that, she only read her own main points to check the flow of the ideas and edited them. After that, in the fourth time, she started

to write the draft. She did not edit many sentences in the draft as she did all changes in writing the main points in the margin of the original text. And finally, in the fifth time, Myra read the draft and edited few times. This was in contrast to Hana who selected the main ideas a few times and wrote the draft without editing.

Hana, like Myra and Mona, read the text from the beginning to the end once. After that, she started to read the source text paragraph by paragraph and wrote the draft without final editing. She wrote only a few notes in the original text scripts, in the margin, and interestingly, her draft was more like a compare-contrast essay between ants and human rather than the summary of the original text. Indeed, she was hardly able to select the main points properly. The rationale could be the lack of declarative knowledge of selection of main points in metacognition. Hana tried to understand the whole content and rephrase the words rather than paraphrasing or summarizing the original text. Whenever she was unable to rephrase the sentence or a phrase, she copied some sentences and words from the original text as she had lots of challenges in the meaning of the vocabulary which could be because of poor English proficiency. Furthermore, she edited the text a few times while she was writing the sentences. She neither read her draft nor edited the draft after completion of her summary writing. That was the reason she had few revising points in the draft.

Aida's strategy of summarizing was quite different. At first, she read the text once. In the reading part, in contrast to the other four participants, she went beyond the text; she read the text and commented several times on the content more like self–response. After the first reading, in the second and third times, she read the source text from the beginning paragraph by paragraph, each time twice or three times and wrote a few word in margin and selected main points by underlining the sentences. She had lots of clarification on meaning of a sentence, a phrase or a word.

In the fourth time, she crossed out the redundant sentences of the original text, connecting the main points together. In fact, she cancelled the extra information of the text paragraph by paragraph in order to make it easier for the next step in summarizing; Kintsch and van Dijk (1978) called this step "deletion". In the fifth time, she started to write the first draft. After that, in sixth time, she polished the first draft and edited the points. However, she did not edit the last paragraph of the first draft. After that, in the seventh round, she wrote the second draft and finally in the eighth round, she edited the second draft.

Guideline of excerpts. In this part the guide of excerpts and the examples of the learners' shifts between the metacognitive and cognitive strategies are discussed in detail. In order to elaborate the issues under study, quotations and related transcripts from the participants' think aloud protocols or interviews are given. The researcher set certain signs and coding in order to show the excerpts clearly. However, a few signs were adopted from the think aloud coding of the previous research (e.g., El Mortaji, 2001; Wang, 2004). *Italic* words are the written words being read or reread in English; **bold** words are their thinking in English; simple Times New Roman words are their mother tongue verbalizations; *italic bold* words are the words being repeated; underlined words are those written by the participants; underlined italic words are those copied from the source text; **underlined bold** are those written in the margin; next to a specific phrase or title of the original text; **_underlined bold italic_** words are participants' reading own drafts; ~~strikethrough~~ words are those cancelled from the summary draft; **~~strikethrough-bold~~** words are those underlined ,highlighted or put in the parenthesis in the source text; ***~~Strikethrough-bold-italic~~*** words are those being read or re-read the underlined or highlighted sentences in the source text; **BOLD CAPITAL** words are those which

are errors in the think aloud protocol; ***ITALIC BOLD CAPITAL*** are thoses errors in reading the source text; *(Italic in brackets)* are words being read the original text by the participants silently; one slash (/)is the pause of either reading or think aloud and finally five slashes(/////) indicates the long pause . Some example are provided below. It is vital to clarify that since the excerpts included some strikethrough or lines as figurative features, they were called Figures in the current study. According to The Merriam-Webster's dictionary (2016), the figure could be line or any representative pattern that illustrated specific facts. In other definition, a figure is referred to the group of words or phrases that are included as a part of a composition or theme. Therefore, the researcher used Figures for the detailed Interactions between metacognitive and cognitive strategies.

"Whereas prehistoric man had no exposure to urban (rereading in English) **ok I think this one. I underline the sentence**… (thinking aloud in English) *ants have lived in urban settings for close on a hundred million years...* (repeating the sentence) **so this sentence I can put…. I can make it an as an evaluation of this point/** (pause)**…can I do that?"**

"…..a million queens living in 4500.(writing in the draft) ….like to makkan…(verbalizing her thought in her mother tongue)…*the thinks that intelligent members of the animal kingdom (reading from the text)*/(pause)<u>*the intelligent members of the animal kingdom*</u> (copying from the text)…"

<u>*"...However...*</u> ***the researcher had come out*** with a ...***with a...*** ~~research that..~~.(deleting the words).*come out with the report* lah **not a research"**

"…**How the intelligence of the ant/**(pause)**how/**(pause)**how the ants are special/basic./**<u>**How the ants are …special than the. from the other animal?**</u>. **In what way?"** (writing next to the title/margin of the source text)

"…~~**Ryabko and Reznikovaants can transmit complex messages**~~ (highlight the sentence in the source text)…"

"…~~***Then this scout ant is removed and foragers are let to proceed and find the food in the maze without adour clues from the scout ants. Hence***~~ ... (reading or re- reading the underlined or highlighted sentences in the source text)…"

"….they SAYS that (making grammatical mistake in think aloud)…"

"….***Ants IS***(making mistake in reading the source text) ***quite similar, with human   beings***(reading the draft)…"

"…. *Even more impressively, DNA analysis of the fungi suggests that the ants improve or   modify the fungi by regularly swapping and sharing strains with neighbouring ant colonies.* (reading the original text sentence silently)…"

"…improve or modify /upgrade/just use one/*they* <u>improve the fungi by</u>///// (long pause) *sharing strains…"*

Furthermore, each line of the learners' interactions is considered as a shift. It planning-operating-assessing, is an interaction cycle which the learner shift from planning to operating and to assessing and the cycle of interaction will be completed. One may ask why the lines are not presented in the shape of cycles to be clearer. Actually, all the shifts in the line are based on the recursive manner of relationship between metacognitive and cognitive Strategies (Figure 4.4). To be precise, the interaction cycle of shifts is also shown in Figure 4.8. Therefore, all the tables which are shown the interaction of metacognitive and cognitive strategies are basically cycles which the researcher presented them in a line to show each specific shift in a cycle.
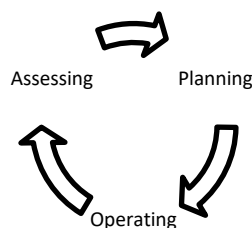
Figure 4.8. Planning-operating-assessing: an interaction cycle

Since the demonstration of several cycles in the circular figure is not possible, the researcher writes each learner's shift(s) in each line. As a result, each line

resembles the shifts of the learners' interactions between the metacognitive and cognitive strategies.

Learners' shifts between reading metacognitive and cognitive strategies. The learners' interactions between the metacognitive and the cognitive strategies in reading are discussed the in this section.

As mentioned earlier, the learners' shifts between the metacognitive and cognitive strategies were classified based on the summarizing steps processes which are reading and selecting the main points. (Kintsch and van Dijk, 1978) .In specific in the reading, the learners read the text, comprehend the content while in selecting the main points, the learners evaluate the original summary text, select the main ideas and delete the redundant points. The other research also identified almost the same steps.in summarizing (Brown & Day, 1983; Hidi & Anderson, 1986; Kintsch & van Dijk 1978; Sherrard, 1986).

Moreover, the learners' shifts between the metacognitive and cognitive strategies are considered in the series of cycle rounds. The cycles are the participant's mental activities between the metacognitive and cognitive strategies in summarizing different parts or "chunks" of their think aloud protocols during summarizing. As mentioned earlier, the chunks were either a sentence or a paragraph.

Reading. In this part, the learners' shift between the metacognitive and cognitive strategies in "reading" the original drafts is discussed. Mona, Nisa and Myra, Hana and Aida read the content to comprehend the content. As it is shown in excerpts 1, 2 and 3, the learners' processing interactions between the metacognitive and the cognitive strategies were error recognition which is shown in Table 4.1. It means that, the learners in the planning system selected the new strategies and goals.

Excerpt 1 (Mona-First Reading)

"… *Ants were farmers fifty million years* **ago**/***years*** *before humans were."*

(L.49)

Excerpt 2 (Nisa-First Reading)

*"But in fact the social lives of some members of **this** insect kingdom are sufficiently complex to suggest more than a hint of intelligence.*"(L.6-L8)

Excerpt 3 (Myra-First Reading)

*"Ant intelligence. **Ant**. **Animal, ant.** Intelligence."(*L.4)

Table 4.1

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 1, 2 & 3

Planning-Operating
Assessing-operating
Assessing-planning
Planning-operating-assessing

Then, they implemented the strategies in the operating system and finally in the assessing system; they evaluated and recognized their mistakes in the reading. At this point, the learners interrupted the operating system since they intended to correct their mistakes. Therefore, after stopping the operating system, they moved to the planning system. After that, the learners set the new plans to correct their mistakes and they continue to the regular processing. For example, in Mona's think aloud, she planned to read in the planning system and then she read the text in the operating system ("Ants were farmers fifty million years ago") and mistakenly she added a

new word ("ago"). At this point, she recognized her mistake in reading in the assessing system and she interrupted summarizing the text. Therefore, she moved to the planning system to plan the other strategy or goal to correct her mistake. Then she corrected her mistake in the operating system ("before") and she evaluated the changes in the assessing and she continued to the regular processing. In fact, the learners continued the regular processing of planning, operating and assessing until they identify their mistakes in the system.

Interestingly, Hana and Aida did not make any mistakes while they were reading. Rather, she reflected on the reading material (excerpt 4 &5).Therefore, there was no error recognition while they were reading the original summary text and they read the text in the regular processing.

Excerpt 4 (Hana-First Reading)
"However, in ants there is no cultural transmission -everything must be encoded in the genes - whereas in humans the opposite is true. **Yeah, I agree with this**."*(*L.21-22)

Excerpt 5 (Aida-First Reading)
"Farmer ants secrete antibiotics to control other fungi that might act as 'weeds', and spread waste to fertilise the crop **so nice/My God**" (L43-45) (planning-operating-assessing)

Selection of main ideas. In this part, the learners' shift between the metacognitive and cognitive strategies in "selection of main ideas" of summarizing the expository text is discussed. In the selection of main ideas, the learners evaluated the original summary text and decided which information was necessary to select as the main ideas and which information is redundant to delete. According to the literature, the selection of main points in this study is similar to what Kintsch and Van Dijk (1978) referred to as the deletion step. In fact, in the deletion process, the

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learners read and reduce the original summary texts and organize the microstructure (the structure of individual meaning units and their relations) to construct a macrostructure (generalized representation of the meaning) through a series of transformations of the information using macrorules which used them in the writing and editing their summary drafts.

Basically the participants selected the main ideas based on two processes: selection of main ideas and deletion of extra information. In the selection process, the learners used different strategies such as elaborating the sentences, evaluating the appropriate selection of the important sentences, underlining or highlighting the important sentences or phrases in the text and writing the important points in the margin or next to the certain phrases. In writing the main points in the margin, the learners either copied the sentences, phrased from the original text or write their own words. In fact, the participants generalized the original sentences and wrote them in the margin in order to write in their draft later. It means that, generalization of the content is one step after selection and the learners should select the main ideas, first and then generalize them in to their own words. Generalization is the summarizing process which Kinsch and Van Dijk (1978) mentioned as the second process after deletion process. In this study selection of main ideas are comprised of selection and deletion processes and generalizing is in the writing the summary draft. Therefore, when the learners copied the sentences or phrases from the text and wrote in the margin was counted as the selection of main and if the learners generalized the content of the original text and wrote in the margin was categorized under the generalization process in the writing part of the summary rather than reading section.

In the deletion process, the learners omitted the redundant information and the examples, in the original text. Therefore, the arrangement of the excerpts in this

section was based on the strategies which the participants used and the types of the interaction processing which they use in their summarizing.

Five participants selected the main ideas using different summarizing processing interactions between the metacognitive and the cognitive strategies. Three types of interaction processing were involved in the learners' selection of main ideas: regular, clarification and interruption processing. The three excerpts of learners' interactions in this section were regular while the other excerpts were comprised of regular and clarification. And in one case, there was an interruption processing. In fact, the learners' interactions cycles in the selection of main ideas were unpredictable and they did not follow any certain rules.

Furthermore, the significant point in the selection of main ideas is the clarification processing which the learners clarified the content after or before the regular processing. However, the learners' clarifications in selection of main ideas were less than the regular processing. It means that the participants had fewer problems in selection of main ideas than other types of interaction processes. In addition, the error recognition was not in the process of the selection of main points in the learners' interactions between the metacognitive and the cognitive strategies. The rational could be that the learners only clarified the main ideas and they did not make mistakes in this step.

The excerpts in the selection of maid ideas were classified based on first, the types of processing and second the summarizing strategies or processes. Types of processing are such as regular, clarification and interruption in this section. As it was mention earlier, the summarizing processes in the selection of main ideas are divided in to two parts; selection and deletion. In the selection part, the learners used different strategies such as elaboration, evaluation of the content, underlining or

highlighting the important ideas and writing notes or important point in the margin or next to the certain phrase in the original text. In the deletion part, the participants omitted the redundant information. To show the excerpts in the clear picture, each excerpt was presented in the quotation, figure and table respectively. The quotations are the learners' think aloud protocols of the summarizing, the figures are the detailed processing of the learners' interaction in each cycle and the tables showed the "big picture" of the leaners' interaction cycles between the metacognitive and the cognitive strategies.

Regular interaction processing. In this part, the learners' shift between the metacognitive and cognitive strategies in the "regular processing" of "selection of main ideas" of summarizing the expository text is explained. Mona, Nisa and Myra selected the main ideas without clarification. It means that their interactions between the metacognitive and cognitive strategies were regular without clarification. However, they used different strategies in selecting the main ideas. Mona elaborated the content of the original text in excerpt 6 Nisa omitted the extra information of the content of the original text in excerpt 7 and Myra wrote the important points in the margin with numbers and wrote some words next to the title of the text. Myra also underlined the important sentences in the original summary text in excerpt 8.

In order to show the example of the learners' regular processing interactions between the metacognitive and the cognitive strategies in the selection of main points, Mona's processing interactions were explained in details in excerpts 6, 7 and 9.

Excerpt 6 (Mona-Second Reading-Selection of main ideas)
"Ant intelligence is story about an ant and written life for him. I underline the topic which is Ant intelligence. The topic will give me a full image about what was the essay about so the essay is about Ants. I return

to read introduction. *Of intelligent member of the animal kingdom the creatures that spring immediately to mind are apes and monkeys."*(L.35-42)

In excerpt 6, Mona elaborated the main points in order to select the main ideas. Her interaction processing was regular. At the beginning, in the planning system, she selected the strategy to elaborate the title of the original summary text and in the operating system, she elaborated the title ("Ant intelligence is story about an ant and written life for him"). After that, she evaluated the appropriate explanation in the assessing system and she moved to the new regular cycle of the processing. In the new cycle, she planned to select the strategy in the planning system in order to select the main ideas. Therefore, she moved to operating system to underline the title of the summary text ("I underline the topic which is Ant intelligence") and she evaluated her action in this cycle and she moved to the new cycle. In the planning system, she set the strategy to elaborate the title again and in the operating, she elaborated the title ("The topic will give me a full image about what was the essay about so the essay is about Ants"). And finally, she evaluated and confirmed the elaboration and she moved to the new cycle. Then in the planning, she set the strategy again and she returned to the original text and read the introduction of the original summary text ("I return to read introduction. Of intelligent member of the animal kingdom the creatures that spring immediately to mind are apes and monkeys)*"* and she evaluated the strategy and she continued to the new processing cycle. The details of Mona's interactions between the metacognitive and the cognitive strategies are shown in Figure 4.9 and Table 4.2.

Ant intelligence is story about an ant and written life for him (planning-operating-assessing)**. I underline the topic which is Ant intelligence** (planning-operating-assessing)**. The topic will give me a full image about what was the essay**

about so the essay is about Ants (planning-operating-assessing). **I return to read introduction.** *Of intelligent member of the animal kingdom the creatures that spring immediately to mind are apes and monkeys* (planning-operating-assessing).

Figure 4.9. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 6

Table 4.2.

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 6

Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing

Excerpts 7 and 8 were the other examples of the regular processing of Nisa and Myra's interactions between the metacognitive and cognitive strategies in selecting main ideas. However, in the step of selection of main points, Nisa and Myra had different strategies. Nisa deleted the redundant sentences in her selection main ideas whereas Myra wrote the main points in the margin and next to the title and she also, underlined the important sentences in the original text for the selection of main ideas. The details of the interactions between the metacognitive and the cognitive strategies are shown in Figures 4.10 and Tables 4.3 for Nisa and Figure 4.11 and Tables 4.4 for Myra.

<u>Excerpt 7 (Nisa-Second Reading-Selection of main ideas)</u>

"And *in a twelve year program of work ah Ryabko and Reznikova have found evidence thatANT (ants)* can transmit very complex messages. **Okay according to the ~~Ryabko and Reznikovaants can transmit complex messages.Scouts~~** *who*

had **LOCATE** *(located)* food *in a maze returned to mobilise their foraging team.*

Scout who had **LOCATE** *(located) food in a maze return to mobilise their foring*

TEAM (teams).*They engaged* in *A* (-) *contact* **SESSION** *(sessions),* a*t the end of*

which the scout was removed in order to observe what **THE** (her) *team might*

do."(L.108-114)

And *in a twelve year program of work ah Ryabko and Reznikova have found evidence that*

ANT (ants) can transmit very complex messages (planning-operating-assessing). **Okay**

according to the ~~Ryabko and Reznikovaants can transmit complex messages.~~Scouts

(planning-operating-planning) *who had* **LOCATE** *(located)* food *in a maze returned to*

mobilise their foraging team. Scout who had **LOCATE** *(located) food in a maze return to*

mobilise their foring **TEAM (teams).** *They engaged*in*A* (-) *contact***SESSION***(sessions),* a*t*

the end of which the scout was removed in order to observe what **THE** (her) *team might*

do (planning-operating-assessing).

Figure 4.10. Detailed Learner's Interactions between Metacognitive and Cognitive

Strategies of Excerpt 7

Table 4.3

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 7

Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing

Excerpt 8 (Myra-Second Reading-Selection of main ideas-macrostructure)

"…*and the idea that ants demonstrate sparks of cognition has certainly not been rejected by those involved in these investigations.* **So 1, the first point is that /mm/ intelligent animals. I'm gonna write this down intelligent animals** **intelligent animals** we **would think of apes and monkeys,** *apes and monkeys* **but ah found out that mm**/**2some insects/ some lives** *some lives* of insects are very complex /**IS IT** **complex enough to** tell-**to indicate that they are** **intelligent**. Okay. Point number 3, ants come to mind."(L.97-102)

…and the idea that ants demonstrate sparks of cognition has certainly not been rejected by those involved in these investigations (planning-operating-assessing). **So 1, the first** **point is that /mm/ intelligent animals** (planning-operating-assessing). **I'm gonna write** **this down intelligent animals** **intelligent animals** we **would think of apes and** **monkeys,** *apes and monkeys* (planning-operating-assessing) **but ah found out that** **mm/2 some insects/ some lives** *some lives* of insects are very complex / **IS IT** **complex** **enough to** tell-**to indicate that they are intelligent** (planning-operating-assessing).Okay. Point number 3, ants come to mind (planning-operating-assessing).

Figure 4.11: Detailed learner's interactions between metacognitive and cognitive strategies of excerpt8

Table 4.4

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 8

Planning-operating-assessing
Planning-operating-assessing

Planning-operating-assessing

Planning-operating-assessing

Planning-operating-assessing

Regular-clarification-interruption processing. In this part, the learners'
shift between the metacognitive and cognitive strategies in the "Regular-clarification
–interruption processing" of "selection of main ideas" is described. Furthermore,
each participants' behavior in the selection and deletion processes of summarizing
the expository text is explained. The learners' interaction processing in this section
was comprised of regular and clarification processing cycles. As it was mentioned
earlier the learners' strategies were divided in to two parts selection and deletion. In
the selection, in selection of main ideas were such as elaborating the sentences,
evaluating content, selecting and underlining important sentences, writing the
important ideas in the margins of the text or next to the certain phrases. In the
deletion, the learners omitted the unnecessary information and examples in the
original summary text. The excerpts of the data were arranged based on the
individual participant in the selection and deletion processes of selecting the main
ideas.

Mona. Basically, Mona chose different strategies in order to select the main
points. She underlined the important sentences in excerpt 9, put the sentence in the
brackets in excerpt 15 and wrote the important point in the margin of the original text
in excerpt10.She used both regular and clarification in selection of main ideas.
Although Mona selected the main points, she did not choose the main point in all
paragraphs and she just chose the parts which were important in her opinion.

<u>Excerpt 9 (Mona-Second Reading-Selection of main ideas)</u>

" *…The ants therefore cultivate these fungi in their nests, bringing them leaves to ...***this is the elaboration of this point So I will take this**/**this sentence as main point /this is the main point/right? So I write it/I write main points.** ~~Ants were farmers fifty million years before humans were.~~

(L. 58-71, 10:53-11:09)

<u>Excerpt 10 (Mona-Third Reading-Selection of main ideas, paraphrasing</u>

<u>and note taking)</u>

"specialist/of the ants /special/how the ant is special ? How it is different from the others animals? The others animals? Ok la. **I will say about how** *how* **because of the word intelligence then so it must be something like how or** *how ants how ants* **are special**... **/in part special than because of the word intelligence/**<u>how</u> **or how** <u>ants</u> **how ants** <u>are special rather than</u> *than* <u>the others animal</u>/<u>how in what kind in what way</u> *what way the ant is special*/**ok fasting/faster/I take this one."**(L.127-144)

<u>Excerpt 11 (Mona-Third Reading-Selection of main ideas)</u>

"*Ants are so much like human beings as to be an embarrassment. They farm fungi, raise aphids as livestock, launch armies to war, use chemical sprays to alarm and confuse enemies, capture slaves, engage in child labour, exchange information ceaselessly. They do everything but watch television.* /**I don't understand this sentence / they do everything but watch television/ so who? They do everything but watch television/how? Don't know. This sentence talking about ants do everything but watch television/ who**

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watch television /doesn't watch television/(sight)/ I don't know la/ just take this one la./ take the whole sentence ok/I don't know/*Other skills being learned from others. Their fungus farming and aphid herding crafts are sophisticated when compared to the agricultural skills of humans five thousand years ago but have been totally overtaken by modem human agribusiness***" (L.167-186)

Mona, in excerpt 9, selected the main ideas by putting the bracket and underlining the sentence in the original text. Considering the above example in Mona's selection of the main ideas. Mona, initially, selected the new strategy in the planning system, and then she skimmed the text **"***The ants therefore cultivate these fungi in their nests, bringing them leaves to***)". In the assessing system, she evaluated her processing and she moved to the planning for the new processing cycle. In the new cycle, she planned for elaboration and in the operating system and then she elaborated and clarified the content ("…this is the elaboration of this point so I will take this/this sentence as main point /this is the main point/right?"). At this point, in the assessing, she evaluated her clarification in the assessing system and after that she moved to the new cycle. In the new cycle, she planned to underline and wrote the "main point" next to the sentence in the planning system. In the operating, she underlined the sentence and put the sentence in the bracket and wrote <u>"main points"</u> next to the sentence in the original text "("So I write it/I write main point. Ants were farmers fifty million years before humans were."). And finally, in the assessing, she evaluated the selection and after confirmation of evaluation, she moved to the new cycle in the summarizing processing system. Figure 4.12 and Table 4.5 showed Mona's detailed interactions and the interaction cycles.

…*The ants therefore cultivate these fungi in their nests, bringing them leaves to* planning-operating-assessing)...**this is the elaboration of this point So I will take this/this sentence as main point /this is the main point/right?** (planning-operating/operating-assessing/assessing-planning) **So I write it/I write <u>main points.</u> <s><u>Ants were farmers fifty million years before humans were.</u></s>** (planning-operating-assessing).

Figure 4.12. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 9

Table 4.5

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 9

Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing

Mona in excerpt 10 compared the main elements of the text. She actually understood the genre of the text which is a compare-contrast text. She elaborated the title of the original text, she made self-questions and she wrote the main points of comparison of the text next to the title. Actually, in excerpt 10, Mona read the reading material for the third time to be sure about her proper selection of main ideas in the second reading and she selected the other main ideas which she was not sure

about in her previous reading The details of Mona's interactions between the metacognitive and the cognitive strategies are shown in Figure 4.13 and Table 4.6.

specialist/of the ants/special/how the ant is special ? How it is different from the others animals? The others animals? (planning-operating/operating-assessing/assessing-planning) **Ok** la .**I will say about how** *how* **because of the word intelligence then so it must be something like how or** *how ants how ants* **are special** (planning-operating-assessing). /**in part special than because of the word intelligence/how or how ants how ants are special rather than** *than* **the others animal** (planning-operating/operating-assessing/assessing-planning) / **how in what kind in what way** *what way the ant is special* (planning-operating-assessing) /**ok fasting / faster /I take this one** (planning-operating-assessing).

Figure 4.13. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt10

Table 4.6:
Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 10

Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing

In excerpt11, Mona had one clarification and three regular interaction processing cycles. The challenging point for her was selecting of the important sentence. Therefore, she read the text, elaborated and clarified the content. Since she was unsuccessful in selecting the important point in a paragraph, she put bracket for the whole paragraph and she chose the entire paragraph as she was unable to identify the main point in the paragraph. The details of Mona's interactions between the metacognitive and cognitive strategies are shown in Figure 4.14 and Table 4.7.

Ants are so much like human beings as to be an embarrassment. They farm fungi, raise aphids as livestock, launch armies to war, use chemical sprays to alarm and confuse enemies, capture slaves, engage in child labour, exchange information ceaselessly. They do everything but watch television(planning-operating-assessing) /**I don't understand this sentence / they do everything but watch television/ so who? They do everything but watch television/how? Don't know. This sentence talking about ants do everything but watch television/ who watch television /doesn't watch television/(sight)/ I don't know la** (planning-operating/operating-assessing/assessing-planning)/ **just take this one la./ take the whole sentence ok/I don't know** (planning-operating-assessing) /*Other skills being learned from others. Their fungus farming and aphid herding crafts are sophisticated when compared to the agricultural skills of humans five thousand years ago but have been totally overtaken by modem human agribusiness* (planning-operating-assessing).

Figure 4.14. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt11

Table 4.7

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 11

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Hana. Hana, like Mona, did not choose the important point of all paragraphs. She underlined and wrote a few points in the original text. In fact, Hana's selection of main points was more verbal than writing in the original text. Moreover, compared to other participants, interestingly, Hana started to choose the important points from reading the text for the first time. Other learners read the text once, twice or three times and then they started to select the main ideas. In addition, Hana's interactions between the metacognitive and the cognitive strategies comprised both regular and clarification processing.

Hana in excerpt 12 underlined the important point in the selection process and deleted the extra information in the deletion process. Furthermore, Hana had fewer challenges in selection of main ideas compared to other participants. Therefore, in her interaction processing in excerpt 12, among eleven interaction cycles, she had only one clarification and the other were regular processing. It means that she selected the main ideas with fewer challenges.

In addition, Hana, in the deletion process, did not cross out any sentences by writing, rather, she deleted the sentences verbally in her think aloud. Even more, she

connected the main points by adding new words to write the important ideas "by". The researcher in excerpt 12 showed the deleted sentence which Hana omitted verbally. Figure 4.15 and Table 4.8 showed the detailed interactions between Hana's metacognitive and cognitive strategies.

Excerpt 12 (Hana-First Reading-Selection of main ideas)
"…*Even more impressively, DNA analysis of the fungi suggests that the ants improve or modify the fungi by regularly swapping and sharing strains* **Ohhhh. So they work together.** *With neighbouring ant colonies.* **Ants work together and** *continually domesticating new species.* **So,** *~~ants improve or modify the fungi~~* **by this.** **So** ~~ants work together~~ and ~~continually domesticating new species~~ **by improving or modifying fungi** *by regularly swapping and sharing strains ant colonies.*" (L.52-56)

… Even more impressively, DNA analysis of the fungi suggests that the ants improve or modify the fungi by regularly swapping and sharing strains (planning-operating-assessing) **/Ohhhh. So they work together** (planning-operating/operating-assessing/assessing-planning) *with neighbouring ant colonies* (planning-operating-assessing). ***Ants work together and*** (planning-operating-assessing)**/** *continually domesticating new species* (planning-operating-assessing).**So,** *~~ants improve or modify the fungi~~* (planning-operating-assessing) **/by this** (planning-operating-assessing) **/.So ants work together** (planning-operating-assessing) **/and** ~~continually domesticating new species~~ (planning-operating-assessing) **/by improving or modifying fungi** (planning-operating-assessing) /*by regularly swapping and sharing strains ant colonies* (planning-operating-assessing).

Figure 4.15. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 12

Table 4.8

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 10

Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing (9)[a]

[a] The processors repeated the
same processing nine times.

Hana also elaborated and clarified the content of the original text in order to

select the main ideas. Sometimes, she gave comments and made self-questions. As

mentioned before, Hana selected the main ideas mostly in her thinking aloud and

elaborating. She rarely wrote notes or underlined the specific points. All the process

of selection mostly was in her oral explanation. Excerpt 13 is the example of

elaboration, clarification and self-question in Hana's think aloud. The details of

Hana's interactions between the metacognitive and the cognitive strategies are shown

in Figure 4.16 and Table 4.9.

Excerpt 13 (Hana-First Reading-Selection of main ideas)

"And in a twelve-year programme of work, Ryabko and Reznikova/ **who are these**

people? Who are they? Did I CAME across their names just now? Ryabko?

No/*have found evidence that ants can transmit very complex messages. Scouts who*

had located food in a maze returned to mobilise their foraging teams. They

engaged in contact sessions, at the end of which the scout was removed in order

*to observe what her team might do .***Hmmmm** /*During the course of this*

exhaustive study, Reznikova has grown so attached to her laboratory ants that she feels she knows them as individuals – **ooooohhhh, so Reznikova, she's a researcher, as well as Ryabko. So she studies ants in her lab until she feels like she knows them as individuals. Maybe she's obsessed with ants** /Oh **my God** */even without the paint spots used to mark them."* (L.86-94)

And in a twelve-year programme of work, Ryabko and Reznikova (planning-operating-assessing) /**who are these people? Who are they? Did I CAME across their names just now? Ryabko? No** (planning-operating/operating-assessing/assessing-planning) /*have found evidence that ants can transmit very complex messages. Scouts who had located food in a maze returned to mobilise their foraging teams. They engaged in contact sessions, at the end of which the scout was removed in order to observe what her team might do* (planning-operating-assessing). **Hmmmm**/*During the course of this exhaustive study, Reznikova has grown so attached to her laboratory ants that she feels she knows them as individuals* (planning-operating-assessing)– **ooooohhhh, so Reznikova, she's a researcher, as well as Ryabko. So she studies ants in her lab until she feels like she knows them as individuals** (planning-operating/operating-assessing/assessing-planning/ planning-operating-assessing)**. Maybe she's obsessed with ants** /**Oh my God** (planning-operating-assessing) /*even without the paint spots used to mark them* (planning-operating-assessing)*.*

Figure 4.16. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt13.

Table 4.9

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 13

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Nisa. Nisa mostly underlined the key words and rarely wrote main points in the margin of the original text when selecting the main ideas. She knew about the task of summarizing and therefore, she started to choose the important sentences after the first reading. She put the numbers next to each point which she underlined. She elaborated the content in choosing the important sentences. Furthermore, in Nisa's interaction processing, both regular and clarification were involved.

Nisa in example 14, elaborated the content, set the goals and wrote some points in the original text. Nisa's interaction s between the metacognitive and the cognitive strategies comprised of regular and clarification, whereas regular was the dominant processing and clarification was only once. Nisa's clarification was about

the selection of main points in the original text. Nisa's interactions of metacognitive and cognitive strategies in selecting main points are shown in Figure 4.17 and Table 4.9.

Excerpt 14 (Nisa-Second Reading-Selection of main ideas)
 "So the main idea is, first, first I'm gonna talk about main ideas, main idea, <u>main ideas </u>is mm what is, okay, main idea is about <u>animal intelligence,</u> intelligence. And then aha <u>life of ants,</u> <u>one of the most complex creatures that is closer to human other than apes."</u> (L.139-141)

So the main idea is, first, first I'm gonna talk about main ideas (planning-operating-assessing) **main idea, <u>main ideas</u> is** (planning-operating-assessing) **mm what is** (planning-operating/planning-assessing/assessing-planning) **okay, main idea is about <u>animal intelligence</u>, intelligence** (planning-operating-assessing)**. And then aha lives <u>of ants, one of the most complex creatures that is closer to human other than apes</u>** (planning-operating-assessing).

Figure 4.17. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 14

Table 4.10

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 14

Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing

125

| Assessing-planning |
| Planning-operating-assessing |
| Planning-operating-assessing |

Myra. Myra in the selection of main ideas used two strategies. The first strategy was underlining or circling the key phrases ; Myra used this strategy a few times. The second one was writing the important points with numbers in the margin of the original text and after that she read her main ideas and edited them in the margin of the original text. She interacted between regular and clarification processing most of the time.

Interestingly, Myra not only selected the key points in the original text, but also generalized the ideas, changed the key points and wrote the main points in her own words. As mentioned earlier, according to Kintsch and van Dijk (1978), generalization is the next step after the selection of main points in the writing part of summarizing. Myra selected the key phrases, changed them into her own words and wrote them in the margin of the original text. In writing the main ideas in the margin, Myra even read her own points and edited on the spot. She explained about her process in summarizing in the interview:

"Okay first, I just read through, then second time I jot down the key information and I number them so that I would be able to know which one I should read first which one I should read second and all that and third I would read, mm, yea, I would read and check   my grammar whether it flows or not verbally then after that I would transfer it on paper" (Myra's interview-L16-21)

Furthermore, Myra made several mistakes in reading the text and she did not pay attention to the correct form of the words. This could be because of her focus to select

and write the main points. Moreover, Myra asked lots of self-questions in her think aloud. The self-questions were basically clarification of the content. That is one of the reasons which Myra had an active role in the interactions between the metacognitive and the cognitive strategies. It means that she was swapping from regular cycle to the clarification and vice versa.

In example 15, Myra read the text for the second time with several reading mistakes, clarified the content, selected the key words, changed them into her words and wrote them in the margin. She explained in her interview that she did not think aloud how she changed the words to her own ideas in the margin and therefore, the researcher asked her in the interview. She explained: "so I realize I have to change some part". Figure 4.18 and Table 4.11 showed Myra's detailed interactions between the metacognitive and the cognitive strategies.

Excerpt 15 (Myra-Second Reading-Selection of main ideas)

"**Paragraph 7**, *prehistoric man HAS* (had) no exposure to urban *LIFESTYLE (lifestyles) - the forcing house of intelligence - the evidence SUGGEST (suggests) that ants have lived in urban* **urban** *settings for close NOT* on a hundred *for close on a hundred million year*s, developing. **Mm why is the sentence different?** Evidence *SUGGEST (suggests) that ANT (ants) have lived in urban setting for close/* **Isn't this supposed to be to?** *Close* **to** *a hundred million years developing and maintaining underground cities of specialised chambers and tunnels.* **Ants are living in urban areas of their own for close to 100 million years. They have** ~~specialised~~**, they have underground cities which consist of specialized mm chambers and tunnels."** (152-159)

Paragraph 7, *prehistoric man **HAS** (had) no exposure to urban **LIFESTYLE** (lifestyles) - the forcing house of intelligence - the evidence **SUGGEST** (suggests) that ants have lived in urban **urban** settings for close **NOT** on a hundred for close on a hundred million year*s, developing (planning-operating-assessing). **Mm why is the sentence different (**planning-operating/operating-assessing/assessing-planning)**?** Evidence *SUGGEST (suggests) that ANT (ants) have lived in urban setting for close* (planning-operating-assessing) **Isn't this supposed to be to** (planning-operating/operating-assessing/assessing-planning)**?***Close* **to** *a hundred million years developing and maintaining underground cities of specialised chambers and tunnels* (planning-operating-assessing). (**Ants are living in urban areas of their own for close to 100 million years. They have** (planning-operating-assessing) **specialised** (planning-operating/assessing-operating/assessing-planning) ~~specialised~~ (planning-operating-assessing), **they have underground cities which consist of specialized mm chambers and tunnels** (planning-operating-assessing).

Figure 4.18. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt15

Table 4.11

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 15

Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Myra in excerpt 16, which was in her third reading, used an interesting strategy. As mentioned earlier, she wrote the main ideas in the margin of the original text. In this part, she was connecting the main ideas and making sentences while she was thinking aloud. Moreover, she edited her main ideas and added some points to them in the margin of the original text.

Excerpt 16 (Myra-Third Reading-Reading the main points in the source text and editing)

"…Okay now I'm going to read the text to make sure that mm it will flow throughout the summary. *Ant intelligence. When we* ~~*think*~~ **about** ~~*intelligent animals,*~~ **when we when we want to /when the word intelligent animals is shown/we would** ~~*think*~~ **about** ~~*apes and monkeys*~~ **but we failed to notice that** ~~*some lives of insects are complex enough to indicate that they are intelligenCE, intelligent.*~~ **And one of these animals mm are ants**" (L.225-229)

In Myra's interaction processing between the metacognitive and the cognitive strategies in excerpt 16, the regular processing was dominant, while the clarification and the error recognition were equally once. The clarification in this excerpt was because of her error recognition of the wrong parts of speech (noun) which she corrected later (adjective). Myra's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.19 and Table 4.12.

…Okay now I'm going to read the text to make sure that mm it will flow throughout the summary (planning-operating-assessing). *Ant intelligence. When we* ~~*think*~~ *about* ~~*intelligent animals,*~~ (planning-operating-assessing) **when we when we want to** (planning-operating/operating-assessing/assessing-planning) **/when the word intelligent animals is shown/we would** (planning-operating-assessing) *think about* ~~*apes and monkeys*~~ (planning-operating-assessing) **but we failed to notice** (planning-operating-assessing) **that** ~~*some lives of insects are complex enough to indicate that they are*~~ (planning-operating-assessing) ~~*intelligenCE,*~~ (planning-operating/assessing-operating/assessing-planning) *intelligent* (planning-operating-assessing) **And one of these animals mm are ants** (planning-operating-assessing).

Figure 4.19. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt16

Table 4.12

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 16

Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing
Planning-operating

Assessing-operating

Assessing planning

Planning-operating-assessing

Planning-operating-assessing

Aida. Aida's interaction processing not only comprised *regular* and *clarification* but also the *interruption processing* for some phrases. Aida in her selection process highlighted the key phrases, put brackets for the main points or wrote the important points in the margin of the original text. In fact, the key words which Aida wrote in the margin were the rephrase of the whole paragraph. Therefore, for each paragraph, Aida wrote some words in her own ideas with numbers. Sometimes, Aida also connected some parts of text by writing and wrote some phrases and deleted the extra information.

In the deletion process, Aida deleted the redundant information in the original text all the time. She used the deletion process rather than selection. It means that Aida omitted the extra information and examples of the text rather than underlining or writing main points in the margin of the original text.

Aida in her second reading, in example 17, read the text and deleted the examples. Aida was unsure about the pronunciation of the word .Therefore, she clarified the content and she was not successful in planning to confirm the correct pronunciation of the word "arouse" in the original text. Therefore, there was an interruption in the planning system. After that, she came back to the planning system and started the new cycle again, continuing the next part of the text. Aida's detailed interactions between the metacognitive and the cognitive strategies are presented in detail in Figure 4.20 and Table 4.13.

Excerpt 17 (Aida-Second Reading-Selection of main ideas)

"…**let me write down my word**/…**ants**…*ants...ants*…*ants* **versus humans**

/*can be **be** compared to the human use of visual and auditory*

channels/**mmmm***/(as in religious chants, advertising **advertising** images and*

jingles, political slogans and martial music) to arouse and propagate moods and

attitudes **mmmm/cut examples/cutting it**/*to arouse*/au/...*to arouse or*

arouse/ou/~~as in religious chants, advertising images and jingles, political slogans~~

~~and martial music~~) ***to arouse***/au (*to arouse and propagate moods and attitudes.*

The biologist Lewis Thomas wrote, Ants are so much like human beings as to be

an embarrassment."(L.127-134)

…let me write down my word/...**ants.**.*.ants...ants...ants* **versus humans** (planning-

operating-assessing)/*can be **be** compared to the human use of visual and auditory*

channels/**mmmm***/(as in religious chants, advertising **advertising** images and jingles,*

political slogans and martial music) to arouse and propagate moods and

attitudes(planning-operating-assessing) /**mmmm/cut examples/cutting it**/*to*

arouse/au/..*to arouse or arouse*/ou/ (planning-operating/operating-assessing/assessing-

planning/~~planning operating~~)*./*~~(as in religious chants, advertising images and jingles,~~

~~political slogans and martial music~~) (planning-operating-assessing) /***to arouse***/au/

(planning-operating-assessing) (*to arouse and propagate moods and attitudes. The*

biologist Lewis Thomas wrote, Ants are so much like human beings as to be an

embarrassment (planning-operating-assessing).

Figure 4.20. Detailed learner's interactions between metacognitive and cognitive

strategies of excerpt 17

Table 4.13

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 17

Planning-operating assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

~~Planning-operating~~

Planning-operating-assessing

Planning-operating-assessing

Planning-operating-assessing

In excerpt 18 Aida read the original text for the third time, highlighted the main ideas and put them in order by numbering them. Her knowledge about how to summarize the text can be referred to the declarative knowledge of metacognitive, or knowledge about the strategy of particular task (Devine, 1993). In this part, she did not delete the extra points as she omitted them in her second reading. Aida's interactions between the metacognitive and the cognitive strategies consisted of regular and clarification, whereas her regular processing was dominant processing. Aida's clarification was due to the checking of main ideas in order to summarize the text properly. Aida detailed interactions between the metacognitive and the cognitive strategies are presented in detail in Figure 4.21 and Table 4.14.

*"...***So going moving on to the first point/I think I'm going to summarize /checking/ rechecking the points where is/ ehhh/ Am I to explain myself? /mm checking whether is a valid point or not / so/ they are first is** ~~Ants store food, repel attackers and use chemical signals to contact one another in case of attack.~~ **So/I'm highlighting it. Second/start Topic I underlined**". (L.321-326)

…So going moving on to the first point (planner-operator-assessor) **/I think I'm going to summarize/ checking / rechecking the points where is /ehhh/ Am I to explain myself? /mm checking whether is a valid point or not** (planner-operator/operator-assessor/assessor-planner) **/so/ they are /first is** (planner-operator-assessor)**/** ~~**Ants store food, repel attackers and use chemical signals to contact one another in case of attack.**~~ **So, I'm highlighting it** (planner-operator-assessor)**.**

Figure 4.21. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt18

Table 4.14

The Interactions between Processors of Excerpt 18

Planner-operator-assessor
Planner-operator
Operator-assessor
Assessor-planner
Planner-operator-assessor
Planner-operator-assessor

As the data show, the learners' interactions in the reading part comprised of regular and clarification, error recognition and interruption. In addition, the interactions between the metacognitive and cognitive strategies were unpredictable, recursive and dynamic. In summarizing task, as mentioned earlier, reading and writing are integrated with each other. Therefore, in the next section the learners' interactions between the metacognitive and cognitive strategies in writing will be presented and exemplified.

Learners' shifts between writing metacognitive and cognitive strategies. The learners' interactions in writing are discussed in this section based on individual participants. To avoid any confusion, it is vital to mention that "shifts" and "interactions" are the same in content in this study and they are used interchangeably to avoid repetition. The learners in writing used all types of interaction processing such as regular, clarification, error recognition and interruption. Furthermore, the learners' moves in metacognitive and cognitive strategies of writing were more complicated than in reading. This is because the use of metacognitive and the cognitive strategies in writing was more than the strategy use in reading. The participants, most of the time, paid attention to spelling, sentence structure, format and other elements of writing. In addition, the learners' interactions were very fast and dynamic. The learners were always shifting from the regular processing to other types such as clarification, error recognition and interruption in their writing.

As mentioned earlier, the learners selected the main points in reading and after that they started to generalize and write their summary in the writing. In this study, writing process of summarizing comprised the generalization of the original content, construction of the text through variant strategies and transformations and

editing or polishing the actual draft. Basically, this is in line with other studies (Brown & Day, 1983; Kintsch & van Dijk, 1978) on the processes of summarizing.

According to Kintsch and van Dijk (1978), in generalization and construction, the learners organize the microstructure (the structure of individual meaning units and their relations) to construct a macrostructure (generalized representation of the meaning) through a series of transformations of the information using macrorules which they used in writing and editing their summary drafts.

In writing as well as reading, the moves of cognitive and metacognitive strategies were considered in the series of interaction processing cycles in a single chunk of learners' think aloud protocols. Therefore, the organization of this section is based on the individual learners' interactions between the metacognitive and the cognitive strategies in the writing process of summarizing.

Mona. Mona's interaction processing cycles involved regular, clarification, error recognition and interruption. However, Mona's regular processing cycles were the most dominant of all. After regular, clarification, error recognition and interruption were other processing in which Mona interacted between the metacognitive and the cognitive strategies in writing her draft

Furthermore, Mona used different strategies in the process of writing the summary. She sometimes copied from the original text and rephrased certain phrases. She was unsuccessful in paraphrasing; rather, she tried to rephrase the key points which she selected in the reading part of summarizing. Moreover, she had lots of grammatical mistakes in her think aloud probably because her focus was writing the draft rather correction of her own think aloud.

Mona, in example 19, rephrased the key vocabulary or copied the phrases from the original text. Moreover, she edited the draft while writing. She corrected the

grammatical mistake in example 19. Her interaction processing between the metacognitive and cognitive strategies comprised regular, clarification and error recognition. Moreover, the number of the processing cycles of regular processing was the most in Mona's interaction processing. Mona in clarification and error recognition interacted in the same number of processing cycles. Mona's detailed interactions between the metacognitive and the cognitive strategies are presented in detail in Figure 4.22 and Table 4.15.

Excerpt 19 (Mona-Writing the summary draft)

"First of all, I write my name / my name is ***********. **This one I think is**/ **I have to write the topic/so it's ok** lah/**I write ant intelligence**. **Just copy and paste. ok then I start hold on/I start my summary with with/mmm**/**basically/yeah**..basiiiiiically **people are human people/humans are people/ right**?people thinks that…*they thinks that intelligent members of the animal kingdom,* the intelligent members of the animal kingdom **is/is not is/are**/*apes and monkey***)".** (L. 253-293)

First of all, I write my name /my name is ***********.**This one I think is/I have to write the topic/so it's ok** lah /**I write ant intelligence**. **Just copy and paste. Ok then I start hold on** (planning-operating-assessing) **I start my summary with with/mmm**/**basically** (planning-operating/operating-assessing/assessing-planning) **yeah** basiiiiiically (planning-operating-assessing) **people are human people/humans are people/ right**? (planning-operating/operating assessing/assessing-planning) people thinks that (planning-operating-assessing) …*they thinks that intelligent members of the animal kingdom* (planning-operating-assessing), the intelligent members of the animal kingdom (planning-operating-assessing), **is**(planning-operating/assessing-operating/assessing-planning)**/is not**

is/are (planning-operating-assessing)/*apes   and   monkey*)   (planning-operating-assessing).

Figure 4.22. Detailed Learner's Interactions between Metacognitive and Cognitive

Strategies of Excerpt 19

Table 4.15

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 19

Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Assessing-operating
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing

Excerpt 20 (Mona-Writing the summary draft)

"…**How to spell** intelligence of the ants**? Got s or not? /No no no s.** ants.

The intelligence of the ant. **How? mmm. The intelligence of the ant. How**

/how the ants are **special/basic**/*How the ants are* special than the ~~than the~~

from the other animal In what way they are special? ***In what way they are special***". (L. 318-330)

Mona, in example 20, paraphrased the sentence in her own words which she wrote next to the title of the original text in the previous step of selection of main ideas. She actually did not have many generalization sentences in her writing of the summary. On the other hand, Mona's interaction processing between the metacognitive and the cognitive strategies comprised regular, clarification and error recognition respectively. There was no interruption in this part of her think aloud. Mona's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.23 and Table 4.16.

…**How to spell** intelligence of the ants? **Got s or not**? (planning-operating/operating assessing/assessing-planning) **/No no no s.** ~~ants~~ **the *intelligence of the ants*.** (planning-operating-assessing) **How?mmm** (planning-operating/operating assessing/assessing-planning)/ ***The intelligence of the ant*.** (planning-operating-assessing) **How** /how the ants are **special/basic** *How the ants are* /special than the (planning-operating-assessing) ~~than   the~~ (planning-operating/assessing-operating/assessing-planning)/from the (planning-operating-assessing) other animal ? In what way they are special? (planning-operating-assessing) ***In what way they are special***? (planning-operating-assessing)

Figure 4.23. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 20

Table 4.16

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 20

Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Assessing-operating
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing

Excerpt 21(Mona-writing the summary draft)

"…Mmmm/I take this one ...**I underline the sentence**/*domesticating*...D-E-M-O-S-T-I-C-A-T-I-N-G/**mmm/////Then** Hoellobler and Wilsons'*Wilsons'* magnificent ... *magnificent* work for ant lovers *for ant lovers*. *Hoel* **don't know**. *Hoellobler and Wilsons'/Hoel/*~~magnificent work for ant lovers~~/*Hoellobler and Wilsons'...***These…they SAYS that** ~~no nonono~~**not says/report/report** *reporte*d that there are /*there are*360 million workers and a million queens … a million queen*s living in 4500..***4500..interconnected**/ *interconnected nests across a territory* **terri...tory..**of*2.7 square kilo…kilometers* **full stop**".(L. 520-580)

Mona in example 21 copied the sentences from the original text rather than paraphrasing. She copied the sentences which involved statistic report in the original text. Furthermore, she had a spelling problem. She was unsure about the spelling but she tried to write the words and referred back to the preceding one or two paragraphs to check the spelling of the words while she was writing her summary draft. Example 21 is one of her corrections of spelling (domesticating...D-E-M-O-S-T-I-C-A-T-I-N-G). Moreover, Mona made several mistakes and long pauses while she was thinking aloud and she did not pay any attention to her mistakes in think aloud. The reason could be her focus on summarizing processes rather than her own thinking aloud which shows that the complex processes of mind during summarization.

The interaction processing in Mona's think aloud in example 21 comprised all types of processing such as regular, clarification, error recognition and interruption. While the regular processing was the most dominant of all with seven cycles, the error recognition had more processing after regular with 3 cycles and after that, clarification and interruption had the same number of cycles (one each).

Mona's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.24 and Table 4.17. According to Mona's interactions between the metacognitive and the cognitive strategies, the error recognition is more active rather than clarification. Comparing to other participant, Mona made the most corrections during thinking aloud and writing the summary draft. Meaning that, she had a lot of challenges in writing correct sentences and that could be why, all the time, she tried to check the words before and after she wrote them.

"…Mmmm/I take this one ...**I underline the sentence** (planning-operating-assessing) /d*emosticating* (planning-operating/assessing-operating/assessing-planning) D-

E-M-O-S-T-I-C-A-T-I-N-G(planning-operating-assessing)/**mmm/////Then** Hoellobler and Wilsons'***Wilsons'*** magnificent ... ***magnificent*** work for ant lovers ***for ant lovers***(planning-operating-assessing)/***Hoel***(plannig-operating/operating-assessing/assessing-planning)/**don'tknow**(~~planning-operating~~)..*Hoellobler andWilsons'*/*Hoel*(planning-operating/assessing-operating/assessing-planning*)/*~~magnificent work for ant lovers~~(planning-operating-assessing) */Hoellobler and Wilsons'...*(planning-operating-assessing) **These…they SAYS that**(planning-operating/assessing-operating/assessing-planning*)* (~~no nonononot~~ **says/report report** (planning-operating-assessing) /*reporte*d that there are /***there are****360 million workers and a million queens … a million queens4500...***4500..interconnected*/*interconnected nests across a territory terri...tory..*of*2.7 square kilo…kilometers* **full stop**. (planning-operating-assessing)

Figure 4.24. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 21

Table 4.17
Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 21

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning-

[a] ~~Planning-operating-~~

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

[a] : failure in planning

Besides spelling, Mona had several pronunciation problems. Sometimes, she could not pronounce the proper names in the text. The example is shown in excerpt 21 as well (*/Hoel/).* It was interesting that Mona did not manage to correct the pronunciation and gave up. Therefore, she just continued to the next part of the text which led to the interruption processing in the cycles. In specific, Mona in the planning system set the goal and strategy and in the operating tried to pronounce the word correctly. However, she was not successful to read the proper noun; she clarified the pronunciation of the word and in the assessing she evaluated her pronunciation and therefore, she moved to the planning system to set a new strategy. At this time, Mona in the planning system was not successful to provide the new goal and strategy in order to pronounce the word correctly. Therefore, she gave up and she stopped the processing which leads to interruption of the summarizing system. Thus, she skipped to the next part without

correcting her pronunciation of her pronunciation and she started the new cycle of processing from the planning.

According to Devine (1993), the learners should have enough "metacognitive knowledge" and "metacognitive experience" in order to implement the metacognitive and cognitive strategies. In fact, the metacognitive knowledge identifies and evaluates the knowledge of the person's ability to perform the task based on the personal, task and strategy knowledge (Devine, 1993, p. 107). According to Wixson (1983, cited in Devine, 1993, p. 107), the strategy knowledge can also be divided into three types: "declarative knowledge, or knowledge about strategies, procedural, or knowledge about how strategies can be employed and conditional, or knowledge about when it is appropriate to apply strategies." Moreover, "metacognitive experience" refers to the awareness or the realization of the success or failures in using the strategies (Devine, 1993, p. 107). Without the metacognitive knowledge and experience, the learners are unable to plan the strategies, implement and evaluate them. Devine (1993) highlighted that the basis of metacognitive experience is the metacognitive knowledge. Therefore, the learners' metacognitive knowledge is the essential part of the summarizing processing system in order to use the metacognitive and cognitive strategies.

Based on the preceding description of metacognitive knowledge and experience, the rationale of Mona's failure in providing the new form in planning the correction of her pronunciation is the lack declarative knowledge. She also did not have enough schemas to pronounce the word. Meaning that Mona stated the uncertainty about the pronunciation of the word and gave up *Hoel/* (**don't know).** This indicates that Mona did not have enough declarative knowledge in pronouncing the new word and did not have enough background knowledge about the proper name.

Furthermore, as Mona did not know how to paraphrase the sentence, the procedural knowledge was involved in this example. In other words, although Mona had the declarative knowledge of paraphrasing, her procedural knowledge was not able to instruct her how to paraphrase and change the sentence. Therefore, Mona copied the sentence from the source text ("living in 4500… 4500...interconnected nests across a territory**.**of2.7 square kilo…kilometers").

Mona in excerpt 22 used the generalization process and paraphrased the sentences. However, her generalization in writing the summary draft was not appropriate as she misunderstood the ideas in the paragraph and generalized the ideas and wrote the summary draft. For instance, the three paragraphs in the original text focused on the history of ants while she wrote about the huge number of ants instead ("There are so many. It's such a big number of ant living around human."). Moreover, she corrected her grammatical mistakes in think aloud in order to write her draft ("There is/There are").

Excerpt 22 (Mona-writing the summary draft)
"… (Referring to the draft) imagine *imagineS* how*… imagine… imagine*…

just imagine/ *just imagine /they just imagine*/*just imagineS* **there's a lot.**

There's a lot/**is a big number of ant.** Just Imagine how */how/* hey [gah-

disappointed[*//how/***ah** **[augh**-frustration] */how/how/how…* imagine

how./Just imagine how**. There is/**There are so many. **It's such a big**

numberS of ants it's such a big number **S** of ants living *living*. There are so

many **It's not my language …**aroundS human. (*There are so many).* **Ok/**

Then move on to the next/ok)…"(L. 599-637)

Mona's interactions between the metacognitive and the cognitive strategies in example 22 comprised regular, error recognition and clarification respectively. This means that the numbers of her error recognition exceeded clarification. Furthermore, clarification and error recognition were interwoven together in some parts of Mona's think aloud and it was impossible to separate them from each other. In other words, after Mona clarified the content, then she was able to recognize her failure. That could be one of the reasons that Mona has challenges in this except to paraphrase the sentence as an ESL learner "(It's not my language)". Although there were both clarification and error recognition respectively in some parts of the participants' think aloud, this study focused on the last processing interactions which lead to the final action of the learners. For instance, Mona clarified the content and identified her mistakes respectively ("*how*/hey */how/***ah**/*how/how/how*"). After that, she omitted the wrong sentence. ("~~imagine how.~~/~~Just imagine how~~"). Therefore, error recognition was considered as the final processing of the learners rather that clarification. Mona's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.25 and Table 4.18.

… (Referring to the draft) imagine *imagineS* how (planning-operating-assessing) *imagine. Imagine*…**just imagine/** *just imagine/***they** *just imagine*/*just imagineS* (planning-operating/operating-assessing/assessing-planning)…**There's a lot.** *There's a lot*…**is a big number of ant.** (planning-operating/operating-assessing/assessing-planning)…Just Imagine how. (planning-operating-assessing) */how*/**hey** [gah-disappointed]/*how/***ah/** [augh-frustration] *how/how/how* (planning-operating/assessing-operating/assessing-planning) ~~imagine how.~~/~~Just imagine how~~. (planning-operating-assessing) **There is** (planning-operating/assessing-operating/assessing-planning) /There are so many. (planning-operating-assessing)

It's such a big number of ants it's such a big number **S** of ants living *living*. **It's**

not my language …aroundS human. (planning-operating-assessing) (***There are so***

many). (planning-operating/assessing-operating/assessing-planning) ~~There are so~~

~~many~~. (planning-operating-assessing) _ _**Ok/Then move on to the next/ok)**

(planning-operating-assessing)

Figure 4.25. Detailed learner's interactions between metacognitive and cognitive

strategies of excerpt 22

Table 4.18

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of
Excerpt 22

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Interestingly in excerpt 22, the metacognitive knowledge played the significant role. Initially, Mona's metacognitive knowledge did not know how to paraphrase and write a new sentence which referred to the lack of the procedural knowledge ("Imagine/imagines/ how imagine. imagine...just imagine/just imagine/just imagine/just imagine"). Moreover, Mona stated about her ability in English which was related to the "personal" metacognitive knowledge ("...it's not my language"). Moreover, in the last statement of think aloud, which Mona mentioned about the confirmation to the next step. ("Ok/Then move on to the next/ok"), indicated the "conditional" knowledge; how the learner used the specific goals and strategies.

Excerpt 23 (Mona-Writing the summary draft)
"...So, never …*so never* **look down** *never so* **appreciate them** appreciated

them *appreciate them* because they are part of *they are part of* …**they are**

important or part of this one/////because they are part of …whatee?

[frustration] ***Because they are part of Ours*** our nature. **Is it correct?**

Appreciate them because they are part of our nature. **I think I finished I**

don't know what I've to write It's so tough."(L. 685-734)

In excerpt 23, Mona paraphrased the original text and wrote her last sentence of the summary conclusion. However, it was challenging for her to paraphrase and

write the last sentence ("whatee?"). Moreover, while Mona was thinking aloud and planning to write, she made a grammatical mistake in writing the draft ("so appreciated them"). However, she repeated the word ("Appreciate them") and read it in her draft ("appreciate them") without any mistakes. The reason could be her focus on writing the ideas correctly in the summary draft rather than checking the sentence structure. Although, in some cases, Mona had a grammatical mistake in her thinking aloud, her sentences were grammatically correct ("Ours our nature"). The grammatical mistakes in Mona's think aloud and her summary draft could be due to her challenge as an ESL learner. It is possible that Mona's first language (Bahasa Malaya) and second language (English) created interference. In addition, Mona did not generalize any ideas in this example and she paraphrased and wrote the last sentence of her draft.

Mona's interaction processing between the metacognitive and cognitive strategies in example 23 comprised regular, error recognition and clarification respectively; which the detailed interactions are shown in Figure 4.26 and Table 4.19. In other words, as in excerpt 22, her error recognition was more than her clarification processing. However, in this example the clarification and error recognition could be easily recognized and they were not interwoven. Moreover, she had a self-question about the appropriate sentence which leads to the evaluation and checking the error. Finally, although she completed the draft, she was still unsure whether she wrote the summary draft in the right way or not. Mona's doubt could be because of the complex task of summarizing for ESL learners ("I don't know what I've to write. It's so tough"). It was interesting that lack of enough "declarative" knowledge of metacognition in Mona's draft was very obvious as she mentioned at the end of the draft ("I don't know what I've to write. It's so draft"). The lack of

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declarative knowledge was due to the challenge of selecting the main points and writing the summary draft:

So, never (planning-operating-assessing) …*so* *never* **look** **down** (planning-operating/assessing-operating/assessing-planning) ~~*never* *so*~~ (planning-operating-assessing) **appreciate them** appreciated them *appreciate them* because they are part of *they are part of* (planning-operating-assessing) **…they are important or part of this one/////because they are part of …whatee?**[frustration] *Because they are part of* (planning-operating/operating-assessing/assessing-planning) **Ours** our nature **.** (planning-operating-assessing) **Is it correct?** (planning-operating/assessing-operating/assessing-planning) *Appreciate them because they are part of our nature*. (planning-operating-assessing) **I think I finished. I don't know what I've to write. It's so tough.**

Figure 4.26. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 23

Table 4.19

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 23

Planning-operating-assessing
Planning-operating
Assessing-operating
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating
Assessing-operating

Assessing-planning

Planning-operating-assessing

Moreover, there was no final reading and editing in Mona's summary draft .The reason was her lack of knowledge and also the challenging task of summarizing as she did not identify the errors in order to edit her draft. She actually edited some parts of her draft while she was writing. When the researcher asked the reason she answered the same: "challenge of summary writing, no idea how to edit my draft after completing writing the summary".

Nisa. Nisa paraphrased the sentences and generalized them in her summary writing. In fact, she was one of the participants who rarely copied the sentences from the original text. Moreover, she edited her sentences after she wrote them in her draft. She did almost the editing part while she was writing her draft. In fact, in the final editing as she was reading her draft, she did not edit much since she had already edited the text in the writing part.

In excerpt 24, Nisa paraphrased and generalized the sentences and edited her sentences after she completed each part. She had a mistake in think aloud. However, she wrote in the draft correctly. She checked the sentences to see whether it made sense or not. She also corrected the grammar mistake in this excerpt.

Excerpt 24 (Nisa-Second Reading-Writing the draft)

"…We human only **CARRIED** carry out instinct**,** only *only, only carry out* basic instinct to the baby. Ants also**, ants wait wait wait wait wait no no no no no this is not right**. **Okay. …***complex.* **Does this make sense?** *All people think that if we talk about animal intelligent, they will think of apes. However, life of ants is much more complex and interesting to look at. It's*

more or less the same as human. **Ah** the similarities IS that ah *similarities* are *similarities are the similarities are* they can *they can* communicate *with each other and they also store food, create a bunch of soldier of war, engage labour. But they didn't have cultural transmission unlike human. Human only carried out basic instinct to the baby.*" (L.162-171)

Nisa's interaction processing between the metacognitive and the cognitive strategies comprised regular, clarification and error recognition. Moreover, the numbers of the interactions in regular was the highest, whereas the numbers of error recognition and clarification were less respectively. Nisa had more error recognition in the editing part of her draft after she wrote the sentence and read it. Nisa's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.27 and Table 4.20.

…We human only **CARRIED** carry out instinct, only *only only carry out* basic instinct to the baby. Ants also *ants* (planning-operating-assessing),**wait wait wait wait wait** (planning-operating/assessing-operating/assessing-planning) **no no no no no this is not right** (planning-operating-assessing). **Okay. …**complex (planning-operating-assessing)...**Does this make sense?** (planning-operating/operating-assessing/assessing-planning) *All people say that if we talk about animal intelligent, they will say apes. However, life of ants is much more complex and interesting to look at. It's more or less the same as human* (planning-operating-assessing)**. Ah** the similarities **IS** that ah (planning-operating/assessing-operating/assessing-planning) *similarities* are *similarities are the similarities are* (planning-operating-assessing),they can *they can* communicate *with each other and they also store food,*

create a bunch of soldier of war, engage labour. But they didn't have cultural

transmission unlike human. Human only carried out basic instinct to the baby
(planning-operating-assessing).

Figure 4.27. Detailed learner's interactions between metacognitive and cognitive
strategies of excerpt 24

Table 4.20

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 24

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

In excerpt 25, Nisa paraphrased and generalized the sentences in her summary writing. She read the main ideas which she selected in her reading part and wrote the original sentences in her own words. Moreover, she had difficulties in selecting vocabulary ("**what's other word for domestically?"**).

Excerpt 25 (Nisa-Second Reading-writing the draft)

"According to **some research done**, ~~*Mueller and Maryland and his colleague …it seems that*~~ **they had continuous search new species.** *According to* research different *researcher* according to different/ *according to different researcher*s, ants, ants continuously *ants continuously domesticating* /*different research/ant continuously /continuously* / **what is the other/ what's other word for domestically ?/domestically/ mm**/*according to* **many researcher** *continuously* **adapting ah or** give birth to different new species." (L.178-183)

Nisa's interaction processing between the metacognitive and the cognitive strategies comprised of regular, clarification and error recognition. The number of her interaction processing from highest to lowest started from regular, clarification and error recognition respectively. The clarification in this excerpt was more related to the paraphrase of the sentence in the original text. Nisa's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.28 and Table 4.21.

According to (planning-operating-assessing) **some research done**, ~~*Mueller and Maryland and his colleague…it seems that*~~ **they had continuous search new species.** *According to* (planning-operating-assessing) research different (planning-operating-assessing) *researcher* (planning-operating/operating-assessing/assessing-planning) according to different/ *according*

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*to different researcher*s (planning-operating-assessing), ants, ants continuously ***ants***

continuously *domesticating* (planning-operating-assessing)/***different research/ant continuously***

/continuously / **what is the other/ what's other word for domestically ?/domestically**

(planning-operating/operating-assessing/assessing-planning) **/ mm/*according to* many**

researcher *continuously* **adapting ah or** give birth to different new species (planning-

operating-assessing).

Figure 4.28. Detailed learner's interactions between metacognitive and cognitive

strategies of excerpt 25

Table 4.21

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of
Excerpt 25

Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

In excerpt 26, Nisa wrote her conclusion sentence. In fact she wrote the sentence and edited the sentence. As in her previous excerpts, she paraphrased the original text and wrote the main ideas in her own words. Interestingly, she added her point of view in the conclusion in contrast to other participants who wrote the conclusion without any points of view.

Excerpt 26 (Nisa-Third Reading- Editing the draft)

Therefore ants can learn as well. And lastly, ants is an amazing creature they just can compare complex messages using odour clues. With this, I believe, ***with this I believe*** ants is a creature ***creature*** that we should not take for granted. (L.212-215, 45:47-46:33)

Nisa's interaction processing between the metacognitive and the cognitive strategies in excerpt 26 comprised regular processing only. Since she was writing the conclusion sentence and editing the last part of her draft, she did not face any challenges in her summarizing. Nisa's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.29 and Table 4.22.

Therefore ants can learn as well. And lastly, ants is an amazing creature they just can compare complex messages using odour clues (planning-operating-

assessing).With this, I believe, ***with this I believe*** ants is a creature ***creature*** that we should not take for granted (planning-operating-assessing).

Figure 4.29. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 26

Table 4.22

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 26

Planning-operating-assessing
Planning-operating-assessing

Myra. Myra used different strategies in writing her summary draft. She rephrased, paraphrased and generalized the sentences. She sometimes copied some vocabulary from the original text. However, she paraphrased the sentences most of the time or changed the structure of the sentences and wrote them in her summary draft. Myra's interactions processing between the metacognitive and the cognitive strategies were dominant with regular. There were clarification and error recognition in her think aloud as well. However, there was no interruption in her interactions between the metacognitive and the cognitive strategies. Myra made a few mistakes in her draft as she was aware about making correct sentences. Compared to other participants, Myra's interaction between the metacognitive and the cognitive strategies was very smooth with a few clarifications and error recognition.

In excerpt 27, Myra generally rephrased, paraphrased and generalized the sentences in her summary draft. She used her main ideas which she wrote in the selection of main points. Moreover, she copied some of the key vocabulary from the original text ("5 thousand years ago" and "sophisticated"). In example 27, Myra tried

to change the structure of the sentences in the original text and write them in her draft. However, she still copied some parts of the original text in her summary draft. In addition, she wrote the sentences and then she edited them. She also checked the flow of the ideas in her draft. This indicates that she had enough knowledge to summarize the academic writing text. Her knowledge about summarizing academic text refers to the task variable of metacognitive knowledge, or knowledge about task of summarizing.

> Excerpt 27 (Myra-Writing the summary draft)
> "***When compared to our ancestors 5 thousand years ago, ants were definitely more sophisticated.*** /mm/*of ants are at least sustainable*. Farming methods *farming methods* by ants are **though** sustainable .*farming methods by ants are* **ahh** *farming methods by ants are sustainable sustainable* sophisticated sophisticated *sophisticated* and *adaptable* mm **so are they still still so are they still mmm** /***5 thousand years ago, ants were definitely more sophisticated*** more sophisticated *more sophisticated sophisticated so* **they're** *more sophisticated.* Ah I don't think I need to put this so rub it off. ~~so are they still~~ But it doesn't flow/ ***Ants however***[reading the previous sentence]... ***due to the modern agribusiness due to the modern due to the*** human ***due to the modern/***human agribusiness human agribusiness. F***arming methods by ants are sustainable*** .Mmmm if I put yet farming methods yet .*farming methods by ants are sustainable more sophisticated and adaptable* (planning-operating-assessing). than that of human beings. ***Human beings.*** Okay **that can work**." (L. 284-299)

Myra`s interactions between the metacognitive and the cognitive strategy consisted of regular, clarification and error recognition processing. Myra had less clarification and error recognition than the regular processing. Therefore, Myra`s

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interactions were arranged based on the number of occurrences from the highest to the lowest which are regular, clarification and error recognition respectively. In other words, she had more clarification than error recognition which was due to the paraphrasing part of the original text. Myra's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.30 and Table 4.23.

When compared to our ancestors 5 thousand years ago, ants were definitely more sophisticated. (planning-operating-assessing) /mm/*of ants are at least sustainable* (planning-operating-assessing). Farming methods *farming methods* by ants are **though** sustainable (planning-operating-assessing). *farming methods by ants are .* **ahh** *farming methods by ants are* sustainable *sustainable* (planning-operating/operating-assessing/assessing-planning) sophisticated *sophisticated* and *adaptable* (planning-operating-assessing) mm **so are they still still so are they still mmm** (planning-operating/operating-assessing/assessing-planning) /***5 thousand years ago, ants were definitely more sophisticated*** (planning-operating-assessing) more sophisticated *more sophisticated sophisticated* so **they're** *more sophisticated.* (planning-operating-assessing) Ah I don't think I need to put this so rub it off.(planning-operating/assessing-operating/assessing-planning) ~~so are they still~~ (planning-operating-assessing) But it doesn't flow (planning-operating/operating-assessing/assessing-planning)/ *Ants however*[reading the previous sentence]…***due to the modern agribusiness*** (planning-operating-assessing) *due to the modern due to the* human *due to the modern* (planning-operating/operating-assessing/assessing-planning)*/*human *agribusiness* human agribusiness(planning-operating-assessing). F***arming methods by ants are sustainable*** (planning-operating-assessing). Mmmm if I put yet farming methods (planning-operating/operating-assessing/assessing-planning) yet (planning-operating-assessing). ***farming methods by ants are sustainable more sophisticated***

and adaptable (planning-operating-assessing). Than that of human beings. ***Human***

beings. Okay **that can work.** (planning-operating-assessing).

Figure 4.30. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 27

Table 4.23

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 27

Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Assessing-operating
Assessing-planning
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating-assessing

Excerpt 28 (Myra-Editing the summary draft)

"Then this scout ant is removed and foragers are let to proceed and find the ***food in the maze without odour clues from the scout ants. Hence*** they they **mm they oh/what do you   call that / manage no they they ah what do you call that…when you can do it? They managed to get ah just use manage** they managed to mm get the food as well *.**Hence ants are valuable little lives.*** " (L349-354)

Myra in example 28, wrote her conclusion sentence. She was in the editing part of her drat in this excerpt. Therefore, she read her draft, made the final changes and at the end wrote the concluding sentences. She paraphrased and generalized the sentences and wrote them in her summary draft. Since she was editing her draft, she had less clarification and error recognition comparing to her previous excerpts. However, she copied some words from the original text

Myra's interactions between the metacognitive and the cognitive strategies were comprised of regular and clarification. There was no error recognition or interruption processing in her example because she was in the final editing of her summary draft. Finally, her clarification was related to the choice of vocabulary ("what do you call that when you can do it?")**.** Myra's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.31 and Table 4.24.

Then this scout ant is removed and foragers are let to proceed and find the food in the maze without odour clues from the scout ants. Hence (planning-operating-assessing) <u>they</u> (planning-operating-assessing) they **mm they oh/what do you call that /manage no they they ah what do you call that when you can do it?** (planning-operating/operating-assessing/assessing-planning) **they managed to get ah just use manage** <u>they managed to</u>(planning-operating-assessing) mm <u>get the food as well</u> (planning-operating-assessing). ***Hence ants are valuable little lives*** (planning-operating-assessing)***.***

Figure 4.31. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 28

Table 4.24

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 28

Planning-operating-assessing
Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing

Hana. Hana wrote two pages for her summary draft. Compared to other learners, Hana wrote a long summary. Her draft was more like rephrasing, paraphrasing and re-structuring the original text rather than summarizing and that can be the reason she wrote long summary drafts. As mentioned earlier, Hana did not

highlight the sentences and she selected a few of the main ideas verbally in her reading. In her writing, she actually compared "ants and human". Interestingly, while she was reading the text, alternatively, she was selecting the main points, paraphrasing, changing the structure of the original sentences with the same words, copying the sentences of the original text, writing them in her draft and finally, editing them. Hana's interactions between the metacognitive and the cognitive strategies comprised regular, clarification and error recognition processing. The regular was the dominant processing of all, whereas clarification and error recognition were equally less than regular processing.

In excerpt 29, Hana wrote her first paragraph of her draft. She compared "ants and human" in her draft ("antS is quite similar with human being"). She simultaneously selected the main ideas and alternatively copied or paraphrased the sentences or changed the structure of the sentences of the original text and wrote them in her draft. Moreover, she had some grammatical mistakes in her think aloud which she wrote the correct from of them in her summary draft("antS is").

Excerpt 29 (Hana-Second Reading-Writing the draft)
"…So, ants intelligence. Basically, this text is about ants. Okay, maybe I should I write down.ants/ humans How should I start? Maybe, antS is quite similar with human being. They they giveS they give same functions towards. Ants IS quite similar, with human beings.They give same functions function as human do. So, as in line with Thomas...Louis Thomas, he said ants are so much like human as beings as to be an embarrassment. Why he said that? Why he said to be as embarrassment? Hmmm. Okay. So except for one thing." (L.99-105)

Hana's interactions between the metacognitive and the cognitive strategies were comprised of regular, clarification and error recognition processing. The number of regular processing was the most, while clarification and error recognition equally were less than regular processing. Hana's error recognition was due to paraphrasing and the grammar mistake in her think aloud. Her detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.32 and Table 4.25.

…So, ants intelligence. Basically, this text is about ants (planning-operating-assessing). **Okay, maybe I should I write down. <u>ants/humans</u>** (planning-operating-assessing) **How should I start? Maybe** (planning-operating/operating-assessing-assessing-planning) ,<u>antS is quite similar with human being. They</u>.**they giveS.***they* <u>give same function towards.</u>(planning-operating-assessing) ***<u>Ants IS quite similar, with human beings.</u>***(planning-operating-assessing) ***<u>They give same function</u>*** (planning-operating/assessing-operating/assessing-planning)<u>   functions   </u>(planning-operating/assessing-operating/assessing-planning**)** ~~**functions**~~ (planning-operating-assessing) ***function* as human do.** (planning-operating-assessing**) So, as** <u>in line with Thomas</u>**...Louis Thomas,** <u>he said ants are so much like human as beings as to be an embarrassment.</u>(planning-operating-assessing) **Why he said that? Why he said to be as embarrassment** (planning-operating/operating-assessing/assessing-planning) ?**/ Hmmm. Okay**. <u>So except for one</u> thing (planning-operating-assessing).

Figure 4.32. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 29

Table 4.25

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 29

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing planning

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Hana in excerpt 30, like excerpt 29, selected and changed the sentences at the same time. In particular, Hana basically changed the structure of the sentences of the original text with the same vocabulary. She did not paraphrase or generalize the sentences as shown in this example. She just tried to re-structure the sentences from the original text with the same words. The reason was due to her language proficiency level. As mentioned earlier, Hana did not select the sentences or highlighted much as she just in verbally chose some sentences, changed them, wrote them in her draft and finally edited them.

Excerpt 30 (Hana-Writing the summary draft)

*"They combine the evidence of visual landmarks with a mental library of local directions, all within a framework which is consulted and updated.***Oh my god, this is so awesome** *(33:54)* **Okay okay, sure.this is one of the points**. <u>Amazingly, ants will not get lost like human being do, always *do.*</u> When they travel, mmm, <u>they already</u>, **how do I spell already**, A-L-R-E-A-D-Y <u>already navigate</u> **the way, the map** <u>the map or way</u> their *their map or way* <u>by</u> mmmm, **updated,** *by* <u>updated integrating bearings</u>, by no no no,(~~updated~~) *by integrating bearings* <u>and distances that is always update,</u> updated. **They have this mental library of local direction within a framework**...they *they* <u>own this mental library of local direction</u> **combine with evidence of visual landmark** *combine with evidence of visual landmarks consulted within a consulted and updated framework.* Okay."

(L.182-191)

Hana's interactions between the metacognitive and the cognitive strategies in excerpt 30 comprised regular, clarification and error recognition. However, she only had one clarification and one error recognition in her

interactions which the regular processing was the dominant interaction in her think aloud in this example. Both clarification and error recognition were because of Hana's choice of vocabulary in her summary draft. The lack of ability to change correct vocabulary was due to her level of English proficiency level. Hana's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.33 and Table 4.26.

They combine the evidence of visual landmarks with a mental library of local directions, all within a framework which is consulted and updated (planning-operating-assessing). **Oh my God, this is so awesome**. **Okay okay, sure. This is one of the points** (planning-operating-assessing).Amazingly, ants will not get lost like human being do, always *do*. When they travel, mmm, they already (planning-operating-assessing), **how do I spell already** (planning-operating/operating-assessing/assessing-planning), A-L-R-E-A-D-Y (planning-operating-assessing) already navigate **the way, the map** the map or way their ***their map or way*** by mmmm, **updated,** *by* updated integrating bearings (planning-operating-assessing), by no no no (planning-operating/assessing-operating/assessing-planning),(~~updated~~) (planning-operating-assessing) *by integrating bearings* and distances that is always **update,** updated. **They have this mental library of local direction within a framework**...they *they* own this mental library of local direction **combine with evidence of visual landmark** *combine with evidence of visual landmarks consulted within a consulted and updated framework.*(planning-operating-assessing).(L.182-191)

Figure 4.33. Detailed Learner's Interactions between Metacognitive and Cognitive Strategies of Excerpt 30

Table 4.26

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 30

Planning-operating-assessing

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Aida. Aida wrote two drafts. In her first draft, she copied the sentences from the original text and then she edited her first draft, deleted some sentences and added some points and wrote them in her second draft. In particular, she copied the sentences in her first draft and she tried to rephrase, paraphrase and generalize the sentences. However, she was unsuccessful. She omitted some parts of the copied sentences in her first draft and she wrote the rest of the copied sentences in her second draft. Aida's interactions between the metacognitive and the cognitive strategies comprised regular, clarification and error recognition. Her regular

processing was dominant, while her clarification and error recognition were less than regular processing. Moreover, she had fewer clarifications in her first draft comparing to her second draft as she copied several sentences from the original text.

Aida in excerpt 31 was writing her first draft. She copied exactly the sentences that she highlighted in the selection of main parts from the original text. After that, Aida changed the structure of the copied sentences and wrote them in her second draft. She did not generalize or paraphrase the sentences. Moreover, she had some problem with choice of vocabulary which may lead to the issue of the ESL context. Meaning that, Aida, as an ESL learner, had a lot of challenges in choosing the correct words in English. She mentioned this point in her interview as well: "It's very hard… I left this science stuff like few years back so I don't really like this cause reminds me of Science." (L. 479). Moreover, she knew about the task variable of the metacognitive knowledge of summarizing which she should not put unnecessary information as she mentioned in her think aloud ("this is not necessary").

Excerpt 31 (Aida-Fifth Reading-Writing the draft)

"**Other than that/**<u>moreover</u>, *they are continually domesticating .new species* as *they* **improve or modify /upgrade/just use one**/*they* <u>improve the fungai by</u> ///// *sharing strains with neighbouring ant colonies.* **This is not necessary**.*as they improve fungi by*/*by* <u>regularly</u> (~~regularly~~) **by** <u>swapping</u> /////(~~swapping~~)/ **by**(~~by~~) **with the**/<u>with neighboring ants</u>/*neighboring ant* <u>colonies</u>."(L517-524)

Aida`s interaction processing between the metacognitive at the cognitive strategies in excerpt31 comprised regular, clarification, error recognition. There was no interruption in her interaction processing. Regular processing in Aida`s interaction was dominant comparing to clarification and error recognition. However, the error

recognition was more than clarification in Aida`s interaction. Both clarification and error recognition in Aida`s interruption were related to the vocabulary choice. Aida's detailed interactions between the metacognitive and cognitive strategies are displayed in Figure 4.34 and Table 4.27.

Other than that (planning-operating/assessing-operating/assessing-planning)/<u>moreover</u> (planning-operating-assessing), *they are continually domesticating .new species* as *they* (planning-operating-assessing), **improve or modify /upgrade/just use one**/(planning-operating/operating-assessing/assessing-planning) *they* <u>improve the fungai by</u> (planning-operating-assessing),/////*sharing strains with neighbouring ant colonies* (planning-operating-assessing),. **This is not necessary.** /*as they improve fungi by* (planning-operating/operating-assessing/assessing-planning)/*by* <u>regularly</u> (planning-operating/assessing-operating/assessing-planning) (~~regularly~~) (planning-operating-assessing) **by** <u>swapping</u>/////(planning-operating/operating-assessing/assessing-planning) (~~swapping~~) (planning-operating-assessing)/**by**/////(planning-operating/operating-assessing/assessing-planning) (~~by~~) (planning-operating-assessing),**with the**/<u>with neighboring ants</u>/***neighboring ant*** <u>colonies</u> (planning-operating-assessing).(L517-524)

Figure 4.34. Detailed learner's interactions between metacognitive and cognitive strategies of excerpt 31

Table 4.27

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of Excerpt 31

Planning-operating
Assessing-operating
Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Planning-operating

Operating-assessing

Assessing-planning

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating

Assessing-operating

Assessing-planning

Planning-operating-assessing

Planning-operating-assessing

Aida in excerpt 32 was writing her second draft. As mentioned earlier, in excerpt 31 Aida copied the selected sentences with little change in structure from the original text and wrote them in her first draft. After that, she omitted some extra information of the copied sentences in the first draft and wrote them in the second draft. As shown in excerpt 32, Aida in her second draft still copied the sentences from the original text with changes in structure. She did not really generalize or paraphrase the sentences probably because of her limited language proficiency. The other reason was her lack of knowledge in order to paraphrase or generalize the sentences which refers to the procedural knowledge, knowledge about how strategies can be used, in the task of summarizing.

Excerpt 32 (Aida-Seventh Reading-Editing the draft)

"***Moreoverthey are continually domesticating new species as they improve*** / **mmm** *__they__* **can** *improve*~~they are continually domesticating new species as they~~ can*improve thefungi   with neighbouring ant colonies***by swapping***/ by swapping __and sharings__." (L581-584)

Aida's interaction processing between the metacognitive and cognitive strategies in excerpt 32 comprised of regular and error recognition. In addition, regular processing was dominant in Aida's interactions and error recognition was represented by only one instance. There was no clarification or only one error recognition because she copied the sentence from the original text with little change in structure. Aida's detailed interactions between the metacognitive and cognitive strategies are shown in Figure 4.35 and Table 4.28.

"***Moreover they are continually domesticating new species as they improve*** (planning-operating-assessing).**mmm (**planning-operating/operating-assessing/assessing-planning)/*__they__* **can** *__improve__* (planning-operating/assessing-operating/assessing-planning/planning-operating/assessing) ~~they are continually domesticating new species as they~~ ***improve***

(planning-operating-assessing).can *improve the fungi with neighbouring ant colonies*

improve (planning-operating-assessing).**by swapping**/ by swapping and sharing *improve*

(planning-operating-assessing).

Figure 4.35. Detailed learner's interactions between metacognitive and cognitive strategies

of excerpt 32

Table 4.28

Learner's Interaction Cycles between Metacognitive and Cognitive Strategies of

Excerpt 32

Planning-operating-assessing
Planning-operating
Operating-assessing
Assessing-planning
Planning-operating
Assessing-operating
Assessing-planning
Planning-operating-assessing
Planning-operating-assessing
Planning-operating-assessing

Summary of research question 1.   Research Question1 focused on the

learners' interactions between metacognitive and cognitive strategies of

summarizing. As summarizing comprised of reading and writing, the arrangement of

the answer to Research Question 1 was based on reading and writing skills.

Basically, in reading and writing, the planning and the assessing as the metacognitive

strategies and the operating as the cognitive strategy monitor and control the

summarizing system in which each one has its own function in the system.

Moreover, the summarizing system initiated with the planning, was followed by the operating and was completed by the assessing. In Research Question 1, the recursive-interactive summarizing processing model including the relationships between the metacognitive and the cognitive strategies were presented. After that, the chain relationship and the comparison of the metacognitive and the cognitive strategies

were discussed and finally the example of the participants' interactions between the metacognitive and the cognitive strategies were presented. In sum, the summarizing processing system was dynamic and recursive and it needs all the processing to cooperate closely in order to summarize the text perfectl

Analysis of the Metacognitive and the Cognitive Strategies in Research Questions 2 and 3

In order to answer Research Question 2 and Research Question3, the process of analysis of the metacognitive and the cognitive strategies will be discussed in this section and after that the findings of Research Question 2 and Research Question 3 will be presented separately. Basically, Sarig's study-summary composing processes (1993) (Appendix H, p. 335) were used as a starting point in classifying the metacognitive and cognitive strategies for reading and writing. Moreover, Hayes and Nash (1996) and Yang and Shi's summary writing strategies (2003) also were used in both reading and writing strategies. Beside all the adopted strategies, the additional strategies which were not used in none of the adopted strategies were added based on the analysis of the think-aloud protocols in the current study. Appendix I (see p. 285) shows the detailed metacognitive and cognitive strategies of summarizing expository text.

Furthermore, as summarizing is a reading-to-write task, it is not easy to consider the reading and writing part completely separately. In other words, writing a

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reading-to write task such as summarizing, involves a level of engagement beyond any reading strategies (Bialystok & Ryan, 1985, p. 103). In conclusion, summarizing is a unique task which cannot be categorized under the reading or writing strategies separately, rather both reading and writing are interwoven. However, the researcher discussed the metacognitive and the cognitive strategies in two parts of reading and writing part of summarizing to show the findings clearly.

Research Question 2: What Are the Metacognitive Strategies Involved When ESL Undergraduates Summarize Expository Text?

In order to answer Research Question2, first, the metacognitive knowledge and metacognitive experience are explained. After that, the metacognitive strategies of reading and writing are discussed and shown with examples.

Metacognitive knowledge and metacognitive experience. The base of the metacognitive strategies is the metacognitive knowledge, which was explained and exemplified in some of the excerpts of Research Question. In this part, the metacognitive knowledge and the metacognitive experience are explained in detail. Basically, Flavell (1978) identified two general dimensions of metacognition: knowledge and experiences. According to Devine (1993), the basis of metacognitive experience is the metacognitive knowledge. In contrast, Flavell (1979) discussed that they are completely different in content. In fact, metacognitive knowledge "refers to the part of one's acquired knowledge that has to do with cognitive matters" (Garner, 1987, p. 21). Based on the metacognitive knowledge, three types of knowledge are related to the metacognitive which are personal knowledge: knowledge about the learner's self-ability, the task knowledge; including the information about the kinds of processing required to perform the task and final the strategy knowledge which is

related to the knowledge of strategies or procedures available for achieving the goals and the effective strategies to achieve a certain cognitive goal (Devine, 1993). Furthermore the strategy knowledge is divided into three types; declarative; knowledge about strategies, procedural knowledge; knowledge how strategies can be used and finally conditional knowledge or knowledge about when it is appropriate to apply strategies. The three types of knowledge are highly interactive and some of this knowledge is declarative, some procedural and some conditional depending on the years of learners' experience with cognitive strategies (Devine, 1993; Flavell, 1985; Wellman, 1985, 1987; Wellman, Collins & Glieberman, 1981).

On the other hand, metacognitive experience is described as "awareness", realization, "ahas or…clicks and chunks" (Garner, 1987, p. 19) of realized or expected success or failures in cognitive enterprises. Metacognitive experience realizes and identifies the errors. In fact, the basis of metacognitive experience is the metacognitive knowledge. Finally, Fischer and Mandl (1984) argued further that there is an interaction between metacognitive knowledge and experience with metacognitive and cognitive strategies. It is worthwhile to mention that the strategy knowledge is more used in the study based on the analysis of the participant's excerpts and the examples of some are presented in this chapter.

Excerpt 33 (Mona-Writing the summary draft)
"First of all, I write my name /my name is…**This one I think is/I have to write the topic/so it's ok** lah/**I write ant intelligence**. **Just copy paste then I start hold on/I start my summary with with/mmm/basically/yah** basiiiiiically **people are human** (21:40) **people/humans are people/right**? **ha**/people thinks that…*they thinks that intelligent members of the animal kingdom, the intelligent members of the animal kingdom* **is/is not is/are**/*apes*

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and monkey. **However,** *however however* /**where is it?** *howeve*r/ *where is it*/**thinking thinking thinking thinking**/*Among these, the world of the ant has come in for considerable **However***, **let's paste. No no** <u>however /</u>the researcher ***the researcher*** <u>had come out /</u>*the researcher had come out* <u>with a</u>/***with a/***~~research that~~ *come out with the report* lah **not a research** *with a* <u>report</u> *with a report* **that**/*with a report* <u>about</u> intelligence of the ant." (L. 253-315)

To show a clear example of three types of metacognitive knowledge, consider Excerpt 33. Mona was thinking to begin with a new sentence. ("However, however however /where is it? however/ where is it/thinking thinking thinking thinking"). She was trying to use a discourse marker ("however"). She repeated the word and the same time, she was thinking how to make sentence. Mona's thinking, indeed, indicated that she was using her metacognitive knowledge specifically procedural knowledge to help with how to use "however" in the sentence.

In the same excerpt, Mona used the declarative knowledge "(let's paste. No no)". In fact, the declarative knowledge, strategy knowledge, of summarizing rules helped Mona not to copy the sentence. In another example of the same excerpt "(with a/research that /not a research with a report)", Mona used both the declarative and conditional knowledge in the example. She recognized that "research" is not appropriate (declarative knowledge) and she knew when to use "report" instead of "research" (conditional knowledge). In fact, the declarative and conditional knowledge helped her to perform the task. The cooperation of three types of metacognitive knowledge is very close together that sometimes, as in the previous

example, two or three metacognitive knowledge strategies overlapped and simultaneously worked together.

Generally, the metacognitive knowledge, personal, task and strategy, always checked and supervised any activities and interactions before the monitoring system started to work. Moreover, the metacognitive experiences played a significant role in the monitoring system by having awareness to realize and identify the probable errors in the summarizing processing system. In fact, monitoring of the summarizing processing system was not possible unless both metacognitive knowledge and experience cooperated together respectively as the metacognitive knowledge provided the knowledge of metacognition and the metacognitive experience activated and raised the awareness for error recognition.

Moreover, in the participants' think aloud protocol, the analysis of the metacognitive knowledge was too abstract that the researcher was unable to identify many examples and the participants did not think them aloud specifically. More analysis with think aloud was with metacognitive experience, in which the participants showed their awareness and the error recognition; this is discussed and exemplified in the next section.

Metacognitive strategies. Primarily, the main function of metacognitive strategies was monitoring the progress of cognitive strategies. Mainly, metacognitive strategies in reading and writing consisted of planning task performance, in order to set goals and select the strategies, and then assessing the processing and products of summarizing, in order to detect errors in the summarizing processing system, in both reading and writing. Therefore, like previous research (Sarig, 1993), the planning and the assessing in the reading and writing are discussed and exemplified based on the metacognitive strategies since they are inseparable and interwoven.

Planning and assessing as metacognitive strategies basically cooperate with each other very closely; it is not possible to separate them. Basically, different terminologies were used for metacognitive strategies. Sarig (1989) mentioned "monitoring strategies" as reading strategies and Anderson (1991) stated "supervising strategies" as comprehension strategies. Sarig (1993) also referred to metacognitive strategies in writing as "metacognitive activities" and finally, Devine (1993) referred to the metacognitive strategies in general as "cognitive monitoring". It is important to mention that in summarizing, not only comprehension per se is considered in this study but also comprehension to summarize the text is focused. Therefore, in the current study, the researcher developed summarizing strategies which involved both reading and comprehension strategies and writing strategies. Therefore, the researcher explained the planning and assessing strategies in both reading and writing of summarizing in order to present the result clearly. However, this does not mean that they are considered as separate systems.

Planning. As mentioned earlier, planning is the first processor in the metacognitive strategies. Basically the categorizing of strategies was adopted from previous studies (Hayes & Nash, 1996; Sarig, 1993; Yang & Shi, 2003) for both reading and writing. In particular, planning included *goal setting* and *strategy selecting* (Sarig, 1993). Each planning, moreover, was divided into five categories such as organization, content, text format, a word or sentence choice and task requirement review (Hayes & Nash,1996; Yang & Shi, 2003). However, the text format is only in the writing part of the summary draft. Planning was always involved from the initial reading of the source text to the end of summary writing. Focusing on the data, before summarizing, all participants used planning in their reading and/or in selecting the main ideas and writing the summary draft.

In reading and selection of main ideas, the participants in the current study set the goals and selected strategies. In comparing participants' think aloud protocols with each other, Mona, Nisa and Aida used more goal setting than strategy selecting, while Hana used both goal setting and strategy selecting equally and finally Aida used only strategy selecting.

In writing the summary draft, the participants set goals and selected strategies. Like the reading part, in writing the summary draft, the participants used both goal setting and strategy selecting. Moreover, each category involved planning organization, content, text format, a word or sentence choice and finally task requirement. Compared to reading, writing included all types of planning, whereas in reading, learners did not plan about text format which was only used in the writing part of the summary draft. Furthermore, planning the content was the most used strategy in the participants' think aloud while they were writing their summary drafts. In comparing participants with each other, Mona and Hana used both goal setting and strategy selecting almost equally, Nisa used more goal setting than strategy selecting and finally Myra and Aida used more strategy selecting than goal setting in the planning part of writing their summary drafts.

Goal Setting. In goal setting of reading, the learners planned the organization, content and task requirement. However, they did not plan for a text format and a word or sentence choice. Basically, the participants' goal setting was more related to the content planning as the most used strategy and organization and task requirement respectively. Excerpts 34, 35, 36 and 37 show the examples of goal setting in the learners' think aloud.

Excerpt 34 (Nisa- Reading-goal setting-planning organization)
"First, I'm gonna talk about main ideas" (L.139)

Excerpt 35(Mona- Reading-goal setting-planning content)
"…ok… I make this as an elaboration of this main." (L.161)

Excerpt 36 (Myra- Reading-goal setting-planning content)
"Okay let's summarize one by one." (L.92)

Excerpt 37 (Aida-Reading-goal setting-planning task requirement)
"Conclusion is not important" (L.101)

Moreover, among the participants, Hana did not plan in the reading part of summarization. It means that she did not set goals, nor did she select strategies in the reading part of her summarizing. Instead, she selected the points while she was writing her summary draft. Indeed, she reflected on the text in the reading the original text. Excerpt 38 shows the example in Hana's think aloud.

Excerpt 38 (Hana- Reading-reflection)
"Yeah, I agree with this." (L.22)

In goal setting of writing, the participants used planning content, organization and task requirement. In other words, they did not plan the task requirement and a word or sentence choice in the goal setting. In particular, Mona, Nisa, and Hana used all the planning for the organization, content and task requirement, while Aida used planning organization and Myra used planning organization in goal setting for writing their summary draft. Excerpts 39, 40, 41, 42 and 43 show the examples of the participants' think aloud using different types of planning in goal setting of writing their summary drafts.

Excerpt 39 (Aida-Writing-goal setting-planning organization)
"So I'm gonna do my summary now". (L.484-489)
Excerpt 40 (Hana-Writing-goal setting-planning content)
"Okay Okay. I should start like this."(L.131)

Excerpt 41 (Myra-Writing-goal setting-planning content)
"Now I'm going to read the text to make sure that mm it will flow throughout

the summary." (L. 225-226)

Excerpt 42 (Nisa-Writing-goal setting-planning content)
"Okay I think similarities and differences now." (L.157-158)

Excerpt 43 (Mona-Writing-goal setting planning task requirement)
"Then what else I can worry" (L.205-206)

Strategy Selecting. In selecting strategies of reading, all participants chose different strategies in planning organization content and word or sentence choice in reading. Mainly, in the strategy selecting of reading planning, all participants selected the main points in order to summarize and write their drafts. However, they did not plan the task requirement or text format. Furthermore, the strategy selecting was more dominant with content planning. This was because of the selection of main ideas before writing the summary draft. After content planning, organization and task requirement were the other planning strategies which were used in the strategy selection of reading. Excerpts 44, 45, 46, 47 and 48 show the examples of participants' goal setting in selecting the main points of reading. The examples of different planning such as organization, content and a word or sentence choice are shown in the following examples as well.

Excerpt 44 ((Myra- Reading-selection of main ideas-strategy selecting-planning organization)
"So skip paragraph 8, paragraph 9." (l.175)

Excerpt 45 ((Nisa-Reading-selection of main ideas-strategy selecting-planning content)
"I'm gonna underline this one and this one." (L.101)

Excerpt 46 ((Hana- Reading-selection of main ideas-strategy selecting-planning content)
"Okay okay, sure. This is one of the points." (L.184-185)

Excerpt 47 (Aida- Reading-selection of main ideas-strategy selecting-planning content)
 "I have to highlight it." (L.286)

Excerpt 48 (Mona- Reading-selection of main ideas-strategy selecting-planning a sentence choice)
I will say about how…how because of the word intelligence then so it

 must be something like how or how ants how ants are special."

(L120-122)

In selecting strategies of writing, the participants used different planning. Since the participants were writing their summary drafts, they planned the content all the time more than other types of planning in the strategy selecting. After the content planning, organization planning, a word or sentence choice and task requirement were the other kinds of planning in the learners' think aloud during writing of their summary draft. Excerpts 49, 50, 51 and 52 are the examples of the participants' think aloud in selecting strategies in different types of planning during writing their summary drafts.

Excerpt 49 (Nisa-Writing-strategy selecting-planning organization)
 "So let me read." (L.200)

Excerpt 50 (Myra-strategy selecting-planning content)
"Ah …I don't think I need to put this so rub it off." (L. 291)

Excerpt 51 (Mona-Writing-strategy selecting-planning a word choice)
"…**not says ... report…"** **(**L.229)

Excerpt 52 (Aida-Writing -strategy selecting-planning task requirement)
"oh…paraphrase … paraphrase ." (L. 567)

In contrast to the use of different types of planning, text format was rarely used in the participants' think aloud protocols. In specific, Hana was the only participant who was concerned about the text format. As shown in excerpt 53, Hana was explaining and reasoning about the text format, while other participants did not pay attention to text format when writing their summary drafts. That could explain why they had a lot of mistakes in their spelling for instance.

Excerpt 53 (Hana-Writing -strategy selecting-planning text format)
"I should put a full stop there because it is not related to what I'm going to

   write." (L.178-179)

The analysis of the participants' interview verified the think aloud analysis in planning summarizing. In detail, in strategy selecting of summarizing, Hana explained

about her planning the content, in excerpt 54 and Nisa about planning the organization and content in excerpt 55. Moreover Aida verified the planning for the task requirement as the goal setting in excerpt 56. Furthermore, Mona mentioned in excerpt 57 that she did not plan much in her summarizing which indicates lack of both metacognitive task and strategy knowledge, namely declarative knowledge of summarizing task.

Excerpt 54 (Hana-Summarizing-strategy selecting-planning content)
"I usually do the mind mapping." (L.114)

Excerpt 55 (Nisa-Summarizing-strategy selecting-planning organization and content)
"Similarities differences... This one…ah...try to make a structure…So I make the structure of it at the back of my paper." (L. 202-206)

Excerpt 56 (Aida-Summarizing-goal setting-planning content)
"…and then check for points like how many number of points should I include."(L.49)

Excerpt 57 (Mona-Summarizing-lack of planning)
"I think my strategic …I don't have …a fix strategic ...I just make it …"

(L.190)

Assessing. Assessing strategies as metacognitive strategies were adopted from Sarig (1993) for reading and writing in summarizing. According to Anderson (1991) and Sarig (1987), the assessing in reading includes re-reading and self-questioning and answering. In writing as well, the assessing includes self-questioning and answering (Sarig, 1993). Therefore, the assessing in the current study focused on the self-questioning and answering. Based on Sarig's Composing-Summary Model (1993), the strategies of assessing in this study comprised four categories, namely *resource evaluation, source, process evaluation* and *product evaluation and error diagnosis*. The resources and the source evaluation were the strategies in the reading part of the summarizing and the process evaluation, the product evaluation and error diagnosis

were involved in both reading and writing of summarizing strategies. The use of strategies of assessing as the metacognitive strategies are explained, exemplified and compared among five participants of the study.

Mainly, product evaluation and error diagnosis were the most used strategies which the participants apply in their summarizing. In detail, participants evaluated their conceptual and linguistic knowledge about the comprehension of reading and the meaning of the words in reading and checking the grammar and looking for a new vocabulary or a phrase in writing the summary draft respectively. The participants evaluated the strategies and goals in the process evaluation of reading and writing. Furthermore, the participants evaluated resource and the source strategies a few times. The assessing in the reading and writing part of summarizing are explained in detail in the next section.

Evaluation of resource. As mentioned earlier, one of the strategies of reading is the resource evaluation. According to Sarig (1993), resource evaluation refers to "the relevancy of the knowledge to text and quality of the prior knowledge vis-a-visa the source text". In comparing participants with each other, Nisa, Myra, and Aida used resource evaluation, whereas Mona and Hana did not evaluate the resource knowledge. In particular, Nisa evaluated her prior knowledge, Myra assessed the relevancy of the knowledge to text and Aida used both strategies. Aida was the only participant who evaluated her resources four times as Myra and Nisa recorded twice and once respectively. Actually, the resource evaluation was the lowest used strategy in the assessing of reading part of summarizing. Excerpts 58, 59 and 60 show the resource evaluation in summarizing.

It is worthwhile to mention that the participants have several grammatical mistakes in their think aloud as they focused on the text rather than being aware and

correcting their mistakes during think aloud. Excerpts 58 "(this passage remind)" and excerpt 60 "(is ants)" show the examples of grammatical mistakes. Most of the participants' grammatical mistakes were according to the subject-verb agreement error and the incorrect singular or plural forms of the words.

Excerpt 58 (Nisa-Reading-resource evaluation-quality of prior knowledge)
"**Okay this passage remind me of Ants.**" (L.84)

Excerpt 59 (Myra-Reading-resource evaluation--relevancy of knowledge)
"**They don't have iPad, do they?**" (L.61)

Excerpt 60 (Aida-Reading-resource evaluation-relevancy of knowledge)
"**Why is ants consider intelligent?**" (L.113-114)

Evaluation of source. Source evaluation is involved in the reading part of summarizing which is divided into six categories, namely *text reliability, interest, accuracy, contribution, difficulty, structure and genre and length.* All participants except Mona evaluated the source and based on their proficiency levels, they assessed the source. Specifically, text interest was the highest evaluation for which most participants commented on the source. In comparing participants with each other, Aida used all types of evaluation in which the number of evaluation of text contribution and text interest was the highest among all types. Like Aida, Hana assessed all types of source evaluation except length. In fact, Aida and Hana evaluated the source text more than other participants and they had a lot of problems with comprehension of the text. Furthermore, Aida reflected on the text, evaluated the text and used self-explaining the content to understand the text very well. Actually, Aida used several types of evaluation as she was unable to understand the text very well. Therefore, in her planning in summarizing, as mentioned earlier, she was not successful, whereas in her assessing,

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she assessed resource, source, process and products in order to comprehend the text and select the main points. As a result, one of the reasons for applying of all source evaluation in Hana's and Aida's think aloud was due to their low proficiency level and not having enough knowledge in order to select the main ideas in the complex task of summarizing. On the other hand, Myra evaluated the text reliability, interest, accuracy and difficulty only and Nisa just evaluated reliability, interest and accuracy. Excerpts 61, 62, 63, 64, 65 and 66 are the examples of types of source evaluation in the participants' think aloud.

> Excerpt 61 (Myra-Reading-resource evaluation-text reliability)
> **"This is so weird."** (L.56)
>
> Excerpt 62 (Nisa-Reading-resource evaluation-text interest)
> **"That's interesting."** (L.52)
>
> Excerpt 63 (Myra-Reading-resource evaluation-text accuracy)
> **"…in their heads?"** (L.268)
> Excerpt 64 (Hana-Reading-resource evaluation-text contribution)
> **"….really?"** (L.159)
> Excerpt 65 (Hana-Reading-resource evaluation-text difficulty)
> **"Oh my God, the words are so high that I can't understand it."** (L.33-34)
>
> Excerpt 66 (Aida-Reading-resource evaluation-text length)
> **"How long would it end?"** (L.301)

Evaluation of process. The process evaluation of the participants involved two main strategies which are goal and strategy realizing goal. It means that the participants accepted or rejected their goals or strategies used in their previous activities. Generally, all participants more or less evaluated the goal and strategy realizing goal in their summary writing. In particular, in the reading part of summarizing, Mona, Hana and Aida used both goal and strategy realizing goal in their reading , Myra evaluated the strategy realizing goal and Nisa and Aida did not evaluate any goals or strategies. Furthermore, Aida evaluated her goals more than strategies. Excerpts 67, 68, and 69 are the examples of the participants' process evaluation in reading part of summarizing.

Excerpt 67 (Mona-Reading-process evaluation-goal)
"**So do I have…do I need to …I need to find…to find out the elaboration**?" (L.163-164)

Excerpt 68 (Myra-Reading-process evaluation-strategy realizing goal)
"**Should I include, they do everything but watch television**?" (L.116-117)

Excerpt 69 (Aida-Reading-process evaluation-goal)
"**Ohhh I know… what's her purpose now?**" (L.216)

In the writing part of the summarizing, all participants evaluated goal and strategy realizing goal except Hana who only evaluated her strategies several times with no goal evaluation. In detail, Mona and Nisa equally evaluated goal and strategy realizing goal, whereas Myra, Hana and Aida used more strategy evaluation than goal. Excerpts 70, 71, 72, 73 and 74 show the examples of process evaluation of participants in the writing part of summarizing.

Excerpt 70 (Mona-Writing -process evaluation- strategy realizing goal)
"**let's paste...no no.**" (L.180)

Excerpt 71 (Nisa-Writing -process evaluation- strategy realizing goal)
"**Ants also, ants wait wait wait wait wait no no no no no this is not right.**" (L.163-164)

Excerpt 72 (Myra-Writing -process evaluation- strategy realizing goal)
"Mm… how to continue? " (L.163-164)

Excerpt 73 (Hana-Writing-process evaluation- strategy realizing goal)
"**Okay no, I shouldn't write that**?" (L.213)

Excerpt 74 (Aida-Writing-process evaluation-goal)
"**I should wrap it all …mmm…looking back to original text?**" (L.589-591)

Evaluation of product. The last category of evaluation for assessing as metacognitive strategies was the product evaluation. Product evaluation in reading means the participants evaluated their linguistic, textual and conceptual knowledge while they were reading and reflecting on the source text. In writing, product evaluation

refs to the time when the participants evaluate their drafts based on their linguistic, textual and conceptual knowledge.

Basically, in reading, all participants evaluated their knowledge conceptually and linguistically. In detail, all participants evaluated their conceptual knowledge as the dominant strategy in the product evaluation of the reading part of summarizing. After concept, linguistic knowledge was the other strategy which the participant evaluated for their products. There was no textual evaluation in the assessing of product in the reading part since the learners used this strategy after they started writing their summary drafts. Furthermore, the participants assessed their conceptual knowledge in order to comprehend specific words or sentences. They also evaluated their linguistic knowledge focused on phrasing and syntactic structure respectively. The rationale of the participants' evaluation of their conceptual knowledge in comprehension and their linguistic knowledge in vocabulary and syntax was their low proficiency level as they are ESL learners: Excerpts 75, 76, 77, 78 and 79 show the examples of the participants' evaluation of product in the reading part of summarizing.

Excerpt 75 (Nisa –Reading-product evaluation- conceptual-comprehension)
"Oh what is cultural transmission?" (L.157)

Excerpt 76 (Mona –Reading-product evaluation- conceptual-comprehension)
"I don't understand sentence this sentence. They do everything but watch television … so who? They do everything but watch television. how?" (L.133-134)

Excerpt 77 (Hana-Reading-product evaluation- linguistic - phrasing effectiveness)
"Foraging? Foraging, what is this?" (L.81)

Excerpt 78 (Myra - Reading-product evaluation-linguistic-phrasing effectiveness
"What do you mean by modem?" (L.39)

Excerpt 79 (Aida - Reading-product evaluation-conceptual-comprehension)
"So what is supposed to mean." (L.249)

In the assessment of product in writing the summary draft, the participants evaluated the concept, language and text. In detail, Mona assessed her linguistic knowledge more than conceptual, whereas Nisa and Myra used the conceptual evaluation strategies more than linguistic evaluation. Moreover, Hana only evaluated her linguistic knowledge without any conceptual knowledge and Aida, on the other hand, evaluated her conceptual knowledge only without any linguistic knowledge. One of the reasons for Aida's using conceptual knowledge was her difficulty in understanding the text and looking for a concept to write in her summary. She also mentioned it in her interview: "some words I don't know what it means" (L.421) … "It's very hard to identify the point even though I know about it but it's very hard" (L.500). Surprisingly, the textual knowledge was used a few times. For instance, Nisa was reading her draft and revising it while she was summarizing. Excerpt 80 shows Nisa's evaluation of textual knowledge.

Excerpt 80 (Nisa –Reading own draft-product evaluation-textual-transformation)
"**Does this make sense**?" (L.164-165)

In addition, the participants' concept evaluation focused on comprehension, whereas their linguistic evaluation was more on phrasing and less on the syntactic structure they used. Examples 80, 81, 82, 83, 84 and 85 show the participants' product evaluation in the assessing.

Excerpt 81 (Mona-Writing-product evaluation-linguistic-syntax)
"**How to spell intelligence of the ants.... got s or not...no no no s**?"

 (L.184-185)

Excerpt 82 (Hana -Writing-product evaluation-linguistic-phrasing)
"**How do I spell cultivate**?" (L.132-133)

Excerpt 83 (Nisa -Writing-product evaluation-linguistic-phrasing)
"**What is the other/ what's other word for domestically**?" (L.181-182)

Excerpt 84 (Myra-Writing-product evaluation-conceptual-comprehension)
"**Mm what else it could be deemed as intelligent**?" (L.261)

Excerpt 85 (Aida -Writing-product evaluation-conceptual-comprehension)
"**Can learn as… they can learn...how could ants learn**?" (L.638-639)

The analysis of the data from the participant interviews triangulated with the think aloud data analysis. In detail, Hana mentioned several times about the text difficulty, interest, accuracy and contribution. Moreover, she did not understand some concepts. Therefore; it was difficult for her to select the main points. Excerpts 86, 87 and 88 show Hana's examples of interview assessing.

Excerpt 86 (Hana-Reading-source evaluation-text difficulty)
"At first, I cannot understand the text because it uses some 'high' words that I don't understand**."** (L.3)

Excerpt 87 (Hana-Reading-source evaluation-text contribution)
"This text gives me new facts that I've never come across. (L.250-251)

Excerpt 88 (Hana -Reading-product evaluation-concept-comprehension)
"**…**in context of vocabulary, I think that might be a major help in students to

understand the text better. Okay, but it depends on the level of the text as

well. If we familiar with the topic, but we never encounter the words like, the

high-level words, so still we cannot understand the text because we don't know

the, the meaning of the words although we are familiar to the content of the

text." (L.265-269)

Mona also mentioned about the assessing of the text as text difficulty, accuracy and genre. In fact, she explained that the text was difficult as she found the text scientific. She also assessed her conceptual knowledge as she could not understand some of the concepts. Excerpts 89, 90 and 91 show some examples of Mona's interview assessing.

Excerpt 89 (Mona-Reading-source evaluation-text difficulty)
"…it's so difficult…because have a lot of paragraphs and words**."** (L.5-10)

Excerpt 90 (Mona-Reading-source evaluation-text genre and structure)

"…because it's something that related with biology." (L.238)

Excerpt 91 (Mona-Reading-source evaluation-text interest)

"…it's quite interesting." (L.34)

Myra also mentioned in her interview about the assessing of the text interest and text structure and genre of the source text and the quality of her prior knowledge regarding the source text in the resource evaluation. Myra also stated her difficulty in comprehension the text as an expository text. Excerpts 92, 93, 94, 95 and 96 show some examples of Myra's interview assessing.

Excerpt 92 (Myra-Reading-source evaluation-text reliability)
"Yea, certain text certain paragraph I don't agree yea." (L.11)

Excerpt 93 (Myra-Reading-source evaluation-text genre and structure)
"…This is just an ant intelligent is just informing." (L.309)

Excerpt 94 (Myra -Writing-product evaluation- linguistic-syntax)
"…It's like grammar yea I checked." (L.216)

Excerpt 95 (Myra -Writing-product evaluation- text-transformation)
"…when I was reading it here it sounds right so I transfer it but once I've finished it and I read it again it sounds off." (L. 204-205)

Excerpt 96 (Myra -Reading-product evaluation- concept-comprehension)
"I have to read it and understand it a lot more." (L. 267-268)

Nisa also, in her interview, mentioned about the text interest and her quality of prior knowledge regarding the source text. She also mentioned about the comprehension of the text which referred to her conceptual knowledge regarding the source text. She explained that she just ignored the vocabulary that she did not know. Excerpts 97, 98 and 99 show some of the examples in Nisa's interview in assessing.

Excerpt 97 (Nisa -Writing-product evaluation- text-revision)
"After writing, I read it again." (L. 195)

Excerpt 98 (Nisa-Reading-source and product evaluation-text difficulty and concept
"And difficult word that I didn't understand mm a lot...I ignore**."** (L.338-343)

Excerpt 99(Nisa-Reading-resource evaluation-quality of prior knowledge)
"I watched Ants' movie**."** (L.484)

Aida also mentioned the text difficulty, interest, genre and structure and her quality of knowledge regarding the source text. She also mentioned about her linguistic knowledge in syntactic structure and phrasing an appropriate vocabulary and conceptual knowledge evaluation of the source text. Excerpts 100, 101, 102, 103, 104 and 105 show some examples of Aida's interview in assessing.

Excerpt 100 (Aida-Reading-source evaluation-text interest)
"I read it oh interesting**."** (L.60)

Excerpt 101 (Aida-Reading-source evaluation-text genre and structure)
"…okay so that is the thing that you think this is complex because you don't

know about the meaning**."** (L. 477-478)

Excerpt 102 (Aida-Writing-product evaluation-linguistic-syntax)
"Check the grammar**."** (L. 354)

Excerpt 103 (Aida-Writing-product evaluation-linguistic-phrasing)
"First I check uh the vocabulary if I need to add more**."** (L. 363)

Excerpt 104 (Aida-Writing-product evaluation-text-transformation)
"So I just write everything the ones that I already check I check it and I read

it out loud just to make it sound coherent**."** (L. 183-184)

Excerpt 105 (Aida-Reading-product evaluation-concept-comprehension)
"I don't know what they mean like navigate by integrate bearing and

 distance**."** (L. 315)

Summary of research question 2. Mainly Research Question2 investigated the learners' use of metacognitive and cognitive strategies of summarizing. In order to answer Research Question 2, metacognitive knowledge and metacognitive experience were explained and exemplified. After that, metacognitive strategies such

as planning and assessing were presented with examples based on different strategies in reading and writing part of summarizing. In short, planning comprised two main categories, namely goal selecting. On the other hand, assessing comprised four main parts such as resource, source, process and product evaluation; each part was explained and exemplified in the related section above. The use of each sub-category in metacognitive strategies is very important as they monitor and control the whole system of summarizing all the time.

Research Question 3: What Are the Cognitive Strategies Involved When ESL Undergraduates Summarize Expository Text?

As mentioned earlier, the cognitive strategies of the current study were based on Sarig's study-summary composing processes (1993) which were used as a starting point in classifying the cognitive strategies for reading and writing and then they were modified based on the analysis of the data and the results of the study.

Cognitive strategies. Cognitive strategies in this study comprised operating strategies. In fact, operating strategies are the mental activities in which the learners are involved during summarization. In this study, operating involves the participants' mental behavior and processes of summarizing including reading and writing. In this part, the main categories of operating strategies are presented.

Operating. Basically operating strategies were considered as the cognitive strategies which were divided into five categories, namely *perform, clarify, link, transform* and *revise* based on Sarig's study-summary composing processes (1993). Each main category is explained and exemplified among participants. Mainly the participants used all strategies of all main categories. It means that they perform, clarify, link, transform and revise through summarizing the expository text. However, the participants used different strategies from each other in the same

category which are presented in this part. Furthermore, in this research question, like previous ones, the strategies are presented and discussed in both the reading and writing part of summarizing. The important part to answer this research question is that each category is not necessarily used in both reading and writing. In particular, performing and clarifying are involved in reading and writing, whereas linking is considered as a reading strategy and transforming and revising are engaged as writing strategies.

Perform. All participants in performing strategies read, re-read, wrote, re-wrote, scanned, skimmed, said the words repeatedly, copied the sentences from the original text, underlined and highlighted the main ideas and wrote notes in the margin of the original text. In details, in reading strategies, the learners read the text, scanned, skimmed, underlined, highlighted and wrote some main ideas and note in the margin of the original text. On the other hand, in writing, learners, read their drafts, wrote their drafts and revised the sentences. In comparing participants with each other, with each other, as mentioned earlier in Research question 1, Aida copied several sentences from the text since the text was difficult for her as it was the expository text and she had a little background knowledge about it. She stated in her interview as well: "Mm…come to think of, it this is hard…this is like a science text like factual." (L.392-396) In addition, she did not have enough skills to paraphrase the text. She preferred to copy the sentences even sometimes with little change in structure. She also mentioned it in her interview: "I'm not really good with summarizing…like lost a number of marks in summarizing because I'm not really good." (L.489-490).The other participants more or less copied the sentences and as the same time paraphrased and generalized the sentences in their summary writing. Actually, the difference between reading and writing part in some parts like *read* or

re-read is not possible as in both reading and writing part, the learners read and re-read. The differences is that in reading, the students read or re-read the original summary text, while in writing, the students sometimes read the text and also they read their own drafts. This result supports Sarig's (1993) as focused on the strategies of both reading and writing within the same category of *performing*. Excerpts 106, 107, 108, 109, 110, 111, 112 and 113 show the examples of participants performing in operating.

Excerpt 106 (Mona-Reading-perform-re-read the source text)
"I return to read introduction…o*f intelligent member of the animal*

kingdom the creatures that spring immediately to mind are apes and

monkeys."(L.85-87)

Excerpt 107 (Aida-Reading-perform-read own draft)

"**Firstly, ants store food, and repel attacks by using chemical signals to**

contact one another." (L.624-625)

Excerpt 108 (Nisa-Reading-perform-write out-underline)
"Only basic instincts are carried in the genes **only basic instincts underline**

Basic instincts ~~*basic instincts*~~."(L.34-35)

Excerpt 109 (Aida-Reading-perform-skim)
"...**I'm skimming**…**ohhhhhh…***Buts in fact the social lives of some* **bla**

.*as*.**bla**…"(L.105-106)

Excerpt 110 (Nisa-Reading-perform-scan)
"**Who's Edward? I forgot about that notes, who's Edward, Edward,**

Edward, Who Edward. Where's it Edward. Oh, Edward. This is

Edward." (L.132-134)

Excerpt 111 (Hana-Writing-perform-write)

"Amazingly, ants will not get lost like human being do, always *do.* When they

travel, mmm, they already…" (L.185-186)

Excerpt 112 (Myra-Writing-perform-say repeatedly)
"…***whenever they need to do so. Whenever they need to do so***." (L.199)

Excerpt 113 (Hana-Writing-perform-copy from the source)
"*combine with evidence of visual landmarks consulted within a consulted and*

update framework."(L.190-191)

The analysis of the participants' interview also verified the think aloud

protocol data. In detail, in performing, Aida, Mona, Hana and Myra mentioned about

copying the original text as it was difficult to change the word in the expository text.

Nisa mentioned about her skimming in the text. Hana also mentioned that it was

difficult for her to think aloud and that is why she could not highlight and select the

main ideas appropriately. The excerpts 114,115, 116, 117 and 118 show the

participants' interview examples in performing of operating strategies.

Excerpt 114 (Myra-Writing-perform-copy from the source)
"Copy." (L. 127)

Excerpt 115 (Nisa-Writing-perform-skim)
"I skimmed through." (L. 110)

Excerpt 116 (Hana-Writing-perform-copy from the source)
"I'll just copy. I don't ignore because I thought it might be useful, yeah useful

 in the text." (L. 207)

Excerpt 117 (Mona-Writing-perform-copy from the source)
"…some of it I just copy and paste." (L. 73)

Excerpt 118 (Aida-Writing-perform-copy from the source)
"at first I write the whole thing I copied this I copied that I copied

 that."(L.138)

Clarify. The other main category for operating was clarification of content.

According to Sarig (1993), there are two types of clarification: *lexical and*

conceptual. Lexical clarification refers to decoding denotations and conceptual

meaning, whereas conceptual clarification focuses on the propositional content of the original text. In the current study, the participants only used conceptual clarification. Moreover, clarification is mainly in reading the original text. However, the participants sometimes clarified the original text while they were writing their own draft. Comparing participants with each other, Aida and Hana used several clarifications among others. Nisa, Myra and Mona used clarification strategy more or less. As mentioned earlier, the text was difficult for Aid and Hana and that is why they clarifies lot of sentences and phrases. The other reason was due to their low proficiency level comparing to other participants. Excerpts 119, 120, 121, 122 and 123 show the examples of the participants' clarification.

Excerpt 119 (Nisa-Reading-clarify-concept)
"**So I think this is about intelligence animal, which is the same apes and monkeys but actually ants.**"(11-12)

Excerpt 120 (Hana -Reading-clarify-concept)
"**So this paragraph means that ants are much more, are much more…err…are much more valuable compared to the cave and painting in southern France because ants' societies has been living in this earth for more than sevent million years, but you are bragging about cave painting which dated back 20,000 years ago.**"(L.171-174)

Excerpt 121 (Myra -Reading-clarify-concept)
"**What she's trying to say is, what they're trying to say is ants are little valuable lives as well.**"(L.221-222)

Excerpt 122 (Mona -Reading-clarify-concept)
"**Ant intelligence is story about an ant and written life for him.**"(L. 83-84)

Excerpt 123 (Aida -Reading-clarify-concept)
"**…so mean that ants are better than our ancestors!**"(L.247)

It is worthwhile to mention that the analysis of the participants' interview also verified the think aloud protocol's' data. All participants mentioned about the

difficulty of vocabulary in their interview which read and clarified the concepts several times while they were reading the source text and clarifying the prepositional concepts. Excerpts 124, 125, 126, 127 and 128 show the participants' examples of clarification in their interview.

Excerpt 124 (Myra-Reading-clarify-concept)
"I just read read read and after that they say okay ants is not mm ...no have… don't have cultural transmission." (L. 147-148)

Excerpt 125 (Nisa-Reading-clarify-concept)
"I miss this one. That's why I am confused what is who is Edward?"

(L.65-66)

Excerpt 126 (Aida-Reading-clarify-concept)
"I read it if I'm stuck at 5.I read number 4 the ones that connected 4 and 5 not like 2 or 5 I read like that." (L. 220-221)

Excerpt 127 (Mona-Reading-clarify-concept)
"I refer it to the topic because the topic is about ant intelligent… so in my opinion is how the ants are special than the other animal. So I try to find which specialty like this one… ants who farmers…so … the sentence … is quite interesting for me." (L. 43-45)

Excerpt 128 (Hana -Reading-clarify-concept)
"At first I though it is a story about ants, you story for kids, but then after I read and then they relate the ants to the human beings. I was like, what human beings? I don't know." (L. 7-9)

Link. Linking was the other strategy in reading. Linking comprised of two main categories which were *textual and conceptual*. Comparing to Sarig's composing summary strategies (1993), this study had the same sub-categories in both textual and conceptual link. According to Sarig (1993), textual link refers to the relating "surface text material by means of cohesion makers", while conceptual link refers to the relating "concepts using references and extratextual knowledge". Based on the analysis of the

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participant's think aloud, the strategies for textual link were less than the conceptual link strategies. In the current study, there were four sub-categories for textual link such as "relating anaphora to antecedent, identifying rhetorical linkage among textual segments using overt coherence cues, predicting text development on the basis of rhetorical convention and reproducing rhetorical text development." On the other hand, the categories of conceptual link comprised of" relating topic to comment, relating comment to commentator, detecting and resolving conceptual contradictions, identifying topic of discourse, predicting text development and guessing unknown content on the basis of logical expectations, reproducing conceptual text development and relating relevant knowledge of the world to the text" which all strategies were adopted from Sarig (1993) and modified in this study.

The participants used different strategies in textual link mostly focused on the identifying the rhetorical linkage among textual segments and reproducing rhetorical and conceptual text development. Among participants, Myra, Aida and Nisa used a lot of arrangements of the main ideas which were related to reproducing rhetorical and conceptual text development. However, Mona and Hana used link strategies a few times while they were reading. One of the reasons of learners' use of reproducing rhetorical and conceptual text development strategies was that they had enough knowledge of summarizing skills. Therefore, they knew that the main ideas should be selected properly in order to summarize the text effectively. Excerpts 129, 130, 131, 132, 133, 134 and 135 are the examples of the participant's application of link strategies.

Excerpt 129 (Mona - Reading -link-concept-relate topic to comment)

"**…So mean that ants are better than our ancestors!**"(L. 84-85)

Excerpt 130 (Aida - Reading -link-concept-identify topic of discourse)
"**Firstly, ants store food, avoid attackers and use chemical signals to**

contact…to avoid...it should be detail" (L. 560-561)

Excerpt 131 (Aida Reading -link-concept-relate comment to commentator)
"**Sometimes he compare it with human.**"(L.231)

Excerpt 132 (Myra-Reading-link-text-reproduce rhetorical text development)
"**this is not important**"(L.221)

Excerpt 133 (Mona - Reading -link-text-identify rhetorical linkage)
"**Farmers…so this one is closely about the farmers' time**" (L.166)

Excerpt 134 (Mona - Reading -link-text-relate anaphora to antecedent)
"**I don't understand sentence this sentence. They do everything but watch**

 television …so who?"(L.133-134)

 Excerpt 135 (Nisa - Reading -link-concept-predict text development)
"**They do not have-however, but they do not have cultural transmission such**

 as human unlike human unlike human because mm that's because thing

 only basic…unlike human it's the opposite."(L.160-162)

The analysis of the participants' interview also verified the think aloud protocol data. In linking textual strategies Myra and Nisa mentioned about predicting text development in the source text. Mona and Myra mentioned about identifying the rhetorical linkage of the text. Moreover, Nisa, Aida and Myra mentioned about producing rhetorical text development. In conceptual, Nisa, Aida and Hana explained about identifying topic of discourse. Furthermore, Nisa explained about using conceptual strategies in order to reproduce conceptual text development. Nisa and Myra deleted and resolved conceptual contradictions. And finally, Aida predicted text development and guessed unknown content. Excerpts 136, 137, 138, 139 and 140 are the examples of the participant's interviews in using link strategies.

Excerpt 136 (Nisa-Reading-link-concept-identify topic of discourse)
"sometimes they have the clue, if the sentences like 'for instance', that is not

 the main point." (L. 223)

Excerpt 137 (Nisa-Reading-link-concept- reproduce conceptual text development)
"And then the differences and similarities of humans and ants." (L. 99)

Excerpt 138(Myra-Reading-link-concept-detect conceptual contradictions)
"I was …I was satisfied when they say ants could be more intelligent or as

intelligent as human beings I just read read read and after that they say okay

ants is not mm no have don't have cultural transmission so aha human beings

are more intelligent then after that okay this says ants are more intelligent

again so then they say mm then after this they pick up like from human beings

ant human beings ants then ants." (L. 146-150)

Excerpt 139 (Mona-Reading-link-text-identify rhetorical linkage)
"the sentence is comparing ants with human beings." (L. 34)

Excerpt 140 (Aida-Reading-link- concept-predict text development and unknown content)
"I only compared this one and this one because the points are almost similar."

(L. 72)

Transform. Transform was the other strategies of operating which the participants used in writing their summary drafts. In transform, the participants produced the new version of the text based on the source text and their knowledge. According to Sarig (1993) transform was divided in to *linguistic*, *rhetorical* and *conceptual* categories. In linguistics, the participants worked on the *vocabulary* and *syntax.* In rhetoric, the participants focused on replacing the sequential rhetorical intent paraphrase. In concept, the participants used different strategies in order to change the source text and to paraphrase the text such as deleting, adding and refining, collapsing and conceptualizing strategies.

Actually, in the current study, the participants used linguistic, rhetorical and conceptual strategies of transform .In conceptual strategies, the participants mainly deleted the redundant material in order to select the main point or added and refined the concepts of source text and wrote them in their drafts. They, also, collapsed the concept to substitute a generic category instead of specific names and conceptualized in order to change the conceptual structure qualitatively, used a similarity principle as a starting point for writing their draft and re-arranged the rhetorical structure of the text and wrote them in their summary drafts. In details, Mona, Aida, Nisa and Myra used more conceptual and linguistic strategies, whereas Hana used the rhetorical strategies in addition to linguistic and conceptual strategies several times. Excerpts 141, 142, 143, 144 and145 show the examples of the participants' transforming strategies

Excerpt 141(Mona-Writing-transform-concept-reconceptualize)

"Basically people think that intelligent members of the animal kingdom are apes and monkey. However… the researcher the researcher had come out with report about intelligence of the ant.?" (L.1-3)

Excerpt 142(Nisa-Writing-transform-concept-collapse)

"*Mueller and Maryland and his colleague it seems that* **they had continuous search new species.** *According to* research different…"
(L. 178-179)

Excerpt 143(Myra-Writing-transform-linguistic-syntax-substitute)

"Ants however do not have cultural transmission so they cannot discover new skills that are not encoded in their genes." (L.272-273)

Excerpt 144(Hana-Writing-transform-rhetoric)

"When we are asked about intelligent animals we would immediately think

 about monkeys and apes. However, there are some evidence that certain

 insects have a complex enough life that it could be deemed as intelligent."

(L. 257-261)

Excerpt 145(Aida -Writing-transform-concept-delete)
"mmmm...cut examples...cutting it…" (L.131)

Comparing to Sarig's study (1993), the participants used the same strategies except "the transforming the text by using re-arranging text strategies by hidden topic of discourse". One of the reasons of participants' inability to rearrange the topic of the text discourse in transforming strategy was the level of the proficiency level and the knowledge of summarizing skills. In other words, although the learners in this study were selected based on their high proficiency level, they were not still able to understand specific words or /and apply the summarizing process of the text.

The analysis of the participants' interview also verified the think aloud protocol's' data. In transforming, in linguistic strategies, Hana and Aida mentioned about substituting simpler lexical items, whereas Mona explained about substituting syntactic structure .In conceptual strategies, Myra and Aida mentioned in their interviews about deleting redundancies and supporting information of the text. Furthermore, Aida also commented on using collapsing strategies. Myra mentioned about conceptualizing strategies as well. On the other hand, Nisa and Hana mentioned in their interview about using rhetorical strategies in transforming excerpts146, 147, 148, 149, 150, 151 and 152 show some examples of the participants' interview.

Excerpt 146 (Hana-Writing-transform-linguistic-lexical-substitute)
"So I found that it's better to change the vocabulary while reading?" (L.134)

Excerpt 147 (Mona-Writing-transform-linguistic-syntax-substitute)
"I changed the grammar.**"** (L.101)

Excerpt 148 (Nisa-Writing-transform-rhetoric)
"Uh I use mm I just use simple connectors.**"** (L.159)

Excerpt 149 (Aida-Writing-transform-concept-add and refine-qualify)
"…and then I started changing the words.**"** (L.148)

Excerpt 150 (Myra-Writing-transform-concept-delete)
"I cross it out.**"** (L.110)

Excerpt 151 (Myra-Writing-transform-concept-reconceptualize)
"…if it doesn't flow then I change it just like mm just like paragraph 4.**"** (L.98)

Excerpt 152 (Aida-Writing-transform-concept-collapse)
"I can change to general.**"** (L.115)

Revise. Revising was the last category of operating which was involved in writing part of summarizing. In revising, the participants edited their text and revised the process and products of the summarizing. Based on Sarig's research (1993), revising includes *linguistic*, *conceptual* and *strategic*. In the current study, the participants focused on linguistic and conceptual and strategic strategies respectively. Like transform, the strategies of revising of the current study were almost the same with Sarig's (1993) except two strategies, namely "restoring and textualizing strategies" which the learners in this study did not use. Furthermore, the current study added another strategy to the linguistic section which is d*eleting inappropriate lexical item*. Basically, the participants in revising their drafts used linguistic, conceptual and strategic strategies. In linguistic strategies, the learners replaced inappropriate lexical item, deleted inappropriate lexical item, changed inappropriate register, corrected grammatical errors and rephrased using a syntactic structure more appropriate than the former one. In conceptual strategies, the participants deleted their earlier writing in their drafts and /or added and refined, collapsed and

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conceptualized them in revising strategies .Excerpts 153, 154, 155, 156 and 157 show the participants' revising strategies.

Excerpt 153(Mona-Writing-revise-linguistic-correct grammar)
"had found out ~~had~~ found out." (L.209)

Excerpt 154(Nisa-Writing-revise-concept-add and refine-elaborate)
"It's more or less the same as human. They can they can communicate ...Ah

 The similarities are they can they can communicate." (L.166-168)

Excerpt 155(Myra-Writing-revise-strategy)
"Ah I don't think I need to put this so rub it off." (L.290-291)
Excerpt 156(Hana-Writing-revise-linguistic-delete inappropriate item)
"by no no no,(~~updated~~) *by integrating bearings…*" (L.187-188)

Excerpt157(Aida-Writing-revise-concept-delete-trivia   former information)
"oh…this is not a point..." (L.614-615)

In comparing participants with each other in revision of the text, Mon revised the draft while she was writing each sentence. However, the editing was not for all sentences and she did not have any final editing after completing the summary. Mona used lots of linguistic strategies in her revising. She changes the structure and replaced vocabulary while she was revising the text. Nisa revised her draft only after she wrote the complete summary. Nisa used more conceptual revising like changing the propositional focus and the main ideas which she wrote earlier. Myra, interestingly, edited the main ideas in the margin of the source text and wrote them in her draft. In fact, she started editing while she was selecting the main ideas. After she wrote her summary draft, she revised text a few times. Surprisingly, Myra used several revising strategies in strategic part of revising. She replaced an effective goal and strategy in her revising and she used more language editing rather than changing the concept of the ideas in her revising strategies. Compared to other participants,

Hana did not much editing in the draft as she did all changes in writing the main points in the margin of the original text. Furthermore, Hana edited the text few times while she was writing and after completion of her summary writing. Hana's revising was mainly on the linguistic aspect in order to replace the inappropriate lexical item or correct the grammatical error. Finally, Aida wrote two drafts. After the first draft, she revised it. However, she did not edit the last paragraph of the first draft as she mentioned in her interview "and I didn't check this one…" (L.17). After editing the first draft, she wrote the second draft and revised it. In details, Aida used linguistic and conceptual strategies such as deleting, adding and refining, collapsing and conceptualizing. She rarely used strategic strategies. She was checking and changing the words or correcting the grammar or changing the main ideas.

The analysis of the participants' interview also verified the think aloud protocol's' data. In revising, Hana mentioned that she edited her final draft a few times which was related to the linguistic aspect. Mona, Nisa and Aida and Myra mentioned about the linguistic revision of their draft. In particular, Mona, Nisa and Aida replaced inappropriate lexical items and rephrased an appropriate syntactic structure, whereas Mona mentioned that she replaced inappropriate lexical item more than syntax. In the conceptual strategies, Myra and Aida deleted the trivia information and edited them which they did not identify in their earlier writing. Myra and Aida also added and refined the earlier version of their drafts .In specific, Myra added and refined the sentences in her draft in order to elaborate and specify her previous sentences, whereas Aida added and refined the sentences in her draft in order to qualify her previous sentences. As mentioned earlier, Aida had several revisions and her interview analysis triangulated with her think aloud. Although Aida copied the sentences, she also tried to conceptualize in order to correct former

sentences rhetorically or correct propositional focus of former sentences. However, Aida was not successful as there were several copied sentences from the original text in her draft. She also collapsed her former sentences and also changed the grammar of her former sentences. In strategic revision, Aida and Mona mentioned about their changing the strategies and goal respectively while they were writing and editing their drafts. Excerpts 158, 159, 160, 161 and 162 show some of the examples of the participants' interview in operating.

> Excerpt 158 (Hana-Writing-lack of revising)
> "I usually don't recheck my summary." (L.238)

> Excerpt 159 (Aida-Writing-revise-concept-collapse)
> "I just put this general about ants if I put it research it means like it's a very
>
> mm how do you say… academic." (L. 302-303)

> Excerpt160 (Mona-Writing-revise-strategy-replace an ineffective strategy)
> "I read whether is…whether my sentence is grammatically correct." (L.171)

> Excerpt 161 (Myra-Writing-revise-concept-reconceptualize-proposition)
> "I change my sentence structure." (L. 74-75)

> Excerpt 162 (Nisa-Writing-revise-concept-reconceptualize-rhetoric)
> "Change …change I put up something and then I rub something here…Ah
>
> connectors." (L. 316-318)

Summary of Research Question 3

Research Question 3 investigated the learners' use of cognitive strategies, namely operating strategies. In order to answer Research Question 3, the strategies were adopted from Sarig's composing summary and modified in this study. Although the current study had the same strategies compared to Sarig's, there were still some differences because of the different nature of each study. For instance, three strategies in Sarig's study were not used in the current research. They were such as "*using re-arranging text strategies by hidden topic of discourse*" in transforming the

text and "*restoring strategies*" and *"textualizing strategies*" in revising the text. Furthermore, one more strategy was added to the list of strategies in this study. It was "*deleti*ng *inappropriate lexical item"* in the linguistic aspect of revising.

Mainly, operating strategies consisted of performing, clarifying, linking, transforming and revising. Each of these operating categories was involved in specific skills. For instance, performing was involved in both reading and writing skills, clarifying and linking only in reading skill and transforming and revising only in the writing skill of summarizing. Moreover, each category was engaged in the operating of linguistic, conceptual and sometimes strategic aspects of the strategies. The participants used different strategies in each category which were presented and discussed in each part of Research Question 3.

Chapter 5 Discussion and Conclusion

Introduction

This study was set to shed more light on the ESL undergraduates' shifts between the metacognitive and cognitive strategies during summarizing of the compare-contrast expository text. Furthermore, the current study identified the metacognitive and cognitive strategies that ESL undergraduates employ to summarize the compare-contrast expository text. The findings of the study are firstly reported, in accordance with the research questions. Next, the contribution of the study is discussed. After that, the implications and suggestions for further research obtained from this study are presented. Finally the limitations of this study are discussed in this chapter.

Key Findings of the Study and Discussion

The data of the current study as an in depth qualitative research revealed some important findings and discussions which are discussed according to each research question.

Research question1: how do the ESL undergraduates shift between the metacognitive and cognitive strategies when they summarize expository text?. Considering the aim of the first research question, five ESL undergraduates were asked to summarize an expository compare-contrast text so that the shifts between the learners' metacognitive and cognitive strategies would be identified. According to the data gathered from think aloud protocols, interviews, the original summary text scripts and the learners' drafts, certain findings were obtained and shown in the form of the *recursive-interactive summarizing processing model*. Firstly, the recursive-interactive summarizing processing model was adopted from Sarig (1993) which comprised three system processors, namely *planning, operating* and *assessing.*

The *planning* and *assessing* are metacognitive strategies and *operating* strategies are cognitive strategies. The learners in the planning system selected appropriate goals and strategies. After that, they implemented the strategies in the operating system and finally they controlled and monitored the quality of their summarizing processes and their drafts.

Secondly, the learners shifted between metacognitive and cognitive strategies cyclically and their shifts between metacognitive and cognitive strategies were dynamic. In other words, the learners moved fast between the metacognitive and cognitive strategies during summarizing of the expository text.

Thirdly, there were four types of processing in the recursive-interactive summarizing processing model such as *regular*, *clarification*, *error-recognition* and *interruption processing*. In the *regular processing*, the learners in the planning initiated the system and set the goals and selected their strategies. Then the learners in the operating system implemented the planning's commands and finally the participants in the assessing evaluated their summarizing and the processing system in a recursive process. The *clarification processing* was almost the same as the *regular processing*. However, in the regular processing, the learners shifted from the assessing to the operating, whereas in clarification, the learners' shifted from the operating to the assessing. In the *error recognition,* the learners recognized mistakes in their summarizing performance. Therefore, they paused their summarizing and they stopped the operating system because of error recognition. After that, the learners corrected their mistakes and then the system of summarizing was continued in the regular processing. Finally, in the interruption processing, learners' planning failure led to an interruption in the system. In the interruption processing, the learners in the planning system initiated the system. However, due to the inability of the

learners to provide the new plan, the summarizing system stopped and the learners paused their summarizing. After a while, the participants skipped the original text and moved to the other part of the text to start the new cycle of processing. The chain relationships of the learners' shifts between metacognitive and cognitive strategies were also provided in this chapter to show the clear picture of different types of processing.

Fourthly, the similarities and differences of the learners' shifts between the metacognitive and the cognitive strategies in reading and writing of summarizing were identified in this study. The data revealed that the learners' shifts between the metacognitive and cognitive strategies were the same in both reading and writing parts of summarizing the expository text. On the other hand, the differences of the learners' shifts between the metacognitive and the cognitive strategies in reading and writing were based on two main points; the numbers of the learners' processing types and the number of occurrences of learners' interaction cycles of the learners' shifts between metacognitive and cognitive strategies. In detail, the number of the clarification processing was more than error recognition in reading; whereas the clarification and error recognition numbers were unpredictable in writing. Furthermore, the number of occurrences of learners' interaction cycles in writing was more than in reading. The results of this study support previous studies (Bialystok & Ryan, 1985; Devine, 1993; Nosratinia &Adibifar, 2014) which stated that metacognitive knowledge of writing demanded more analysis than for reading. Even more, writing a summary is more complicated than writing about the a specific topic. Therefore, the summarizing strategies are also different from those used in writing an essay. For instance, summary writing involved two skills, namely reading and writing, whereas essay writing solely focuses on writing skill.

Furthermore, as summarizing skills comprised reading and writing, this study identified the metacognitive strategies and cognitive strategies of reading and writing parts of summarizing the expository text. Therefore, the steps of summarizing in the current study were almost the same as Kintsch and van Dijk's processes (1978). In other words, the learners read the original material, comprehended the text and selected the main ideas in the reading part and wrote their drafts and revised them in the writing part of summarizing the expository text.

Finally, the participants used different strategies and processes in summarizing the expository text. All ESL undergraduates read the text, selected the main ideas, wrote their drafts and revised them. However, they used different strategies in applying the summarizing steps. For instance, Mona, Myra, Hana and Aida read the text from the beginning to the end and then they read the text again and selected their main ideas. On the other hand, Nisa read paragraph by paragraph and selected the main points in reading the original material in reading the text for the first time. Furthermore, Mona, Myra and Hana copied several words and phrases from the original text, whereas Aida and Nisa tried to write their own words or rephrase the original words. Aida also deleted lots of redundant information of the original text. Finally, Hana edited her draft just a few times compared to other participants who had more correction and editing words. Regarding the learners' interactions, Nisa had a lot of clarification in her think aloud because of her weakness in understanding the vocabulary of the original text. She also had a weak performance on selection of main ideas. The examples of the participants' shifts between metacognitive and cognitive strategies are shown and explained in the final part of the answer to the first research question in Chapter Four.

Discussion of Findings in Research Question1. The findings of the current study are in line with other studies that argued that the interactions between metacognitive and cognitive strategies are cyclical and dynamic (Berthold et al. 2007; Roelle et al. 2017; Nuckles, Hubner, Renkl, 2009). Interestingly, they further discussed that in the excursiveness of strategies, metacognitive strategies serve as monitors and cognitive strategies as constructors. To elaborate this concept in a simple way, hypothetically, imagine that people have a huge factory in their brain that have two main roles to run the factory: staff and supervisors. Cognitive strategies are staff and they are supporting human brain to write and produce an action. On the other hand, metacognitive strategies are supervisors that should control and monitor their staff. Therefore, the brain factory is not able to run without any of these two main functions. This exactly happens when participants read and summarize the text. In specific, metacognitive strategies are monitoring the cognitive not to make any mistakes and if they did, correct them and plan for the next step. As Roelle et al. (2017) discussed, this movement or "interplay" is very important in the cycles of metacognitive and cognitive strategies. They argued that the shifts between these strategies almost help the students to construct their knowledge and improve their skills (Berthold et al. 2007)). However, their effects are not always positive. In specific, metacognitive strategies can sometimes reduce the speed of functioning the cognitive strategies and sometimes is a barrier for them to be enhanced. According to Roelle et al. (2017), the metacognitive strategies that may lead to comprehension difficulties have negative effects on students' metacognitive strategies. Interestingly, the result of the current study supports this fact. In particular, in the interruption processing, learners' planning failure led to an interruption in the system. As as mentioned earlier, the learners initiated planning in the system and due to lack of

comprehension of vocabulary, they are not able to continue. Therefore, the metacognitive strategies will be paused and make the cognitive strategies to stop. After a while, the new cycle will be started with the planning system. One of the concrete examples of data analysis of the current study is that the participants skipped the original texts due to lack of knowledge of vocabulary and therefore, they stopped and moved to the next paragraph for the new cycle without understanding the previous part. The theoretical finding of the current study is also endorsed by others studies (Griffinn, Wiley& Theide, 2008; Redford, Thiede,Wiley & Griffin, 2012; Koriat 2012; Koriat, Ackrmann, Avid, Lockl & Schneider, 2014). In particular, they indicated that metacognitive strategies are monitoring the cognitive strategies and if in case, for example, they are not able to access the to their prior cognitive processing of participant, they will fail their functions and they have to start the new cycle. In addition, as mentioned before, the finding of the analysis of metacognitive and cognitive strategies in this study clearly showed that the writing cycles of clarification and error recognition of metacognitive strategies are unpredictable. Similarly, (Nelson and Naren, 1994; Roelle et al. 2017) added that there is no forthright anticipation about the numbers of cycles in metacognitive strategies. The reason is that metacognitive strategies will be stuck in the cycles when there is a barrier of comprehension in specific words. Therefore, they feel that they do not have enough knowledge to understand the content deeply and they start the new cycle. This is exactly the time that researcher in this study pointed out as clarification and error recognition stage. Consequently, the learners repeat the cycles numerously in or to understand the content. Interestingly, Naren, (1994) and Roelle et al. (2017) argued that increasing the numbers of cycles ,which is the result of lack of participants' sufficient knowledge of the words, may cause damage the whole system

and make it to slow down the processing. Likewise, Wang & Han (2017) discussed that learners have more planning evaluating and cognitive strategies when they face with less familiar and more challenging material. This could be another reason for increasing cycles in this study as well. As it is discussed clearly, the finding of the current study is merged with the latest studies in this concept and this study highlighted the detail shifts between the metacognitive and cognitive strategies of summary writing.

On the other hand, the results of the data analysis of summarizing processes were in line with Kintsch and van Dijk's processes (1978). However, participants used different strategies for selection of main ideas like underlining the main points, note taking and circling specific lines in the text. However, due to lack of content knowledge of the text, some students copied the exact words in their drafts. Keck (2014) discussed further that copying the same excerpt from the text is not only limited to L2 learners. L1 learners also plagiarize from the original summary material when they face difficulty of understanding the content. According Taheri Moghaddam (2010), L1 learners plagiarize the key words of original summary when they are not sure about the meaning of the vocabulary. (Choy & Lee, 2012 Idris, Baba & Abdullah, 2011; Keck, 2014; Ngcobo et al. 2016; Pecorari, 2015; Sen, & Kuleli, 2015) argued that selection of main ideas in summarizing and copying from the original material are different in freshmen and upperclassmen students. The more students expose to content knowledge, the more they can increase their knowledge and the less they plagiarize. Therefore, fresh students used more plagiarism than sophomores.

Another significant finding in this study was the lack of vocabulary knowledge of participants which lead them to fail in the interactions of

metacognitive and cognitive strategies. Similarly, according to Ashrafzade and Nimehchisalem (2015), Malaysian undergraduates are weak in using general and paraphrasing skills of summarizing. According to their study, learners achieved the lowest result in vocabulary knowledge. Therefore, they are not able to substitute another word for the content and consequently, they copy the exact excerpt from the original summary task.

Last but least, the findings of the current study highlighted the fact that university students need to enhance their summary writing skills of expository texts since this kind of genre is the common type of university task. As mentioned earlier

, when students summarize the expository texts, they use more abstract, complex and multi syllable word. Therefore, they look for the appropriate words in their minds and they may fail in planning system. Therefore, the finding of the current study highlighted that summarizing expository text needs more time for the students to look for the appropriate vocabulary in paraphrasing the original text which other researchers   supported the finding of the current study (Beers and Nagy 2009; Jeong 2017; Liuliang, 2014; Navid and Berman 2010). They argued that students spend more time in planning process of summarizing the expository text than other types of genre. On the other hand, Kang (2005) discussed further that advanced students have less hard time in understanding the structure of expository text and paraphrasing the original text compared to novice learner. However, there was no significant difference between the sophomore and seniors in this study.

Research question 2: what are the metacognitive strategies involved when ESL undergraduates summarize expository text?. The second research question focused on the metacognitive strategies of summarizing the expository text. The data analysis revealed some significant results. Firstly, since the base of the

metacognitive strategies was the metacognitive knowledge, the researcher looked at two aspects of metacognition by Flavell (1978): knowledge and experiences. Metacognitive knowledge comprised three types of knowledge which were personal knowledge, task knowledge and strategy knowledge. Strategy knowledge itself was divided into three types; declarative knowledge, procedural knowledge; and conditional knowledge. On the other hand, metacognitive experience was "awareness" (Garner, 1987, p. 19) of realized or expected success or failures in cognitive enterprises. Metacognitive experience realized and identified the errors. The participants of the current study used their strategy knowledge most of the time. They were confused about selecting the main ideas when summarizing the expository text. Therefore, they had several challenges with their declarative knowledge of strategies.

Secondly, the metacognitive strategies in this study were planning and assessing in which each category was divided in to several sub-categories. For instance, planning included *goal setting* and *strategy selecting* (Sarig, 1993). Each planning, moreover, was divided into five categories such as organization, content, text format, a word or sentence choice and task requirement review (Hayes & Nash,1996; Yang & Shi, 2003). However, the text format was only in the writing part of the summary draft. Planning was always involved from the initial reading of the source text to the end of summary writing. All participants used planning more and less in reading and writing parts of summarizing the expository text.

Finally, the assessing in the current study focused on the self-questioning and answering. Based on Sarig's Composing-Summary Model (1993), the strategies of assessing in this study comprised four categories, namely *resource evaluation, source, process evaluation* and *product evaluation and error diagnosis*. The resources and the

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source evaluation were the strategies in the reading part of the summarizing and the process evaluation, the product evaluation and error diagnosis were involved in both reading and writing of summarizing strategies. All participants used assessing strategies in summarizing the expository text.

Discussion of Findings in Research Question 2. The findings of other studies (O'Malley & Chamot, 2001; Panahandeh & Esfandiari Asl, 2014; Limpo & Alves, 2013; Vandergrift and Goh, 2012; Wenden,1998) support the key findings of the current research. For instance, they discussed that metacognitive strategies are comprised of planning and assessing. Some refer to self-monitoring strategies while others articulate it as self-regulating or self-evaluation strategies (Ghanizadeh,2012; Kitsantas, Winster & Huie, 2008; Tavakolizadeh, 2011) The point is that all of these studies, like the result of findings of the current study, highlighted that planning, checking, verifying, error recognition and correction are the common feature in all of them.

Moreover, researchers (Abram & Byrd, 2016; Macaro, 2014) confirmed that planning and monitoring are the key elements that challenge students especially in writing. This point supported the finding of this study. It means that the participants had difficulties to set the goal and select the appropriate strategies for the summarizing the expository text.

Finally, as mentioned earlier, there are three types of metacognitive knowledge: strategy, self and task. (Flavell 1978, 1979, and 1985; Vandergrift and Goh, 2012; Wenden, 1998). The findings of this study showed that participants used strategy knowledge more than other types. The reason could be the students' challenge in using appropriate summarizing strategies like selection of main ideas and paraphrasing. Therefore, they used strategy knowledge in order to summarize the

expository text to the best of their knowledge. Interestingly, Dignath and Buttner, 2008 endorsed this fact that learners use strategy knowledge to reflect on their cognitive processes and self-assess them.

Research Question 3: What Are the Cognitive Strategies Involved When ESL Undergraduates Summarize Expository Text?. Operating was considered as the cognitive strategies which were divided into five categories, namely *perform, clarify, link, transform* and *revise*. The participants used different strategies from each other in the same category. Furthermore, performing and clarifying were involved in reading and writing, whereas linking was considered as a reading strategy and transforming and revising were engaged as writing strategies.

Firstly, in performing, all participants in performing strategies read, re-read, wrote, re-wrote, scanned, skimmed, said the words repeatedly, copied the sentences from the original text, underlined and highlighted the main ideas and wrote notes in the margin of the original text. In detail, under reading strategies, the learners read the text, scanned, skimmed, underlined, highlighted and wrote some main ideas and wrote notes in the margin of the original text. On the other hand, in writing, learners, read their drafts, wrote their drafts and revised the sentences. All participants more or less copied the sentences and at the same time paraphrased and generalized the sentences in their summary writing.

Secondly, clarifying in the current study referred to conceptual clarification which focused on the propositional content of the original text. Moreover, clarification is mainly in reading the original text. However, the participants sometimes clarified the original text while they were writing their own draft.

Thirdly, linking was the other strategy in reading. Linking comprised of two main categories which were *textual and conceptual*. Based on the analysis of the participants'

think aloud, the strategies for textual link were less than for the conceptual link strategies. In the current study, there were four sub-categories for textual link such as "relating anaphora to antecedent, identifying rhetorical linkage among textual segments using overt coherence cues, predicting text development on the basis of rhetorical convention and reproducing rhetorical text development." On the other hand, the categories of conceptual link comprised "relating topic to comment, relating comment to commentator, detecting and resolving conceptual contradictions, identifying topic of discourse, predicting text development and guessing unknown content on the basis of logical expectations, reproducing conceptual text development and relating relevant knowledge of the world to the text". Moreover, the participants used different strategies in textual link and mostly focused on identifying the rhetorical linkage among textual segments and reproducing rhetorical and conceptual text development.

Fourthly, in transforming, the participants used linguistic, rhetorical and conceptual strategies of transform. In conceptual strategies, the participants mainly deleted the redundant material in order to select the main point or added and refined the concepts of source text and wrote them in their drafts. They also collapsed the concept to substitute a generic category instead of specific names and conceptualized in order to change the conceptual structure qualitatively, used a similarity principle as a starting point for writing their draft and re-arranged the rhetorical structure of the text and wrote them in their summary drafts.

Finally, revising was involved in writing part of summarizing. Revising included *linguistic*, *conceptual* and *strategic*. Comparing Sarig's (1993) model to this study, the participants did not use two strategies, namely "restoring and textualizing strategies". Furthermore, the current study added another strategy to the linguistic

section which was *deleting inappropriate lexical item*. In linguistic strategies, the learners replaced inappropriate lexical items, deleted inappropriate lexical items, changed inappropriate register, corrected grammatical errors and rephrased using a syntactic structure more appropriate than the former one. In conceptual strategies, the participants deleted their earlier writing in their drafts and/or added and refined, collapsed and conceptualized them in revising strategies.

   Discussion of findings in research question 3. The findings of the data analysis of cognitive strategies were almost the same with Sarig's (1993) with some differences which were discussed in the previous section. The important key point is that different researchers used different strategies (Brown & Day, 1983; Keck, 2014; Hidi & Anderson, 1986; Sherrard, 1986; Winograd, 1984; Yasuda, 2015). However, all of them emphasized that the readers' content knowledge plays a significant role in the cognitive operation of learners. It means that, from the very beginning step of reading the original text and comprehending the content, the participants' cognitive operations start to engage with different strategies. Therefore, the ability of the participants in reading and writing plays a significant role in this step. If they understand the content, they can use all the strategies effectively that were identified in this study (Appendix I, p.303). If they are not able to understand certain words, then they skip some parts and automatically, they do not implement some strategies. Interestingly, Carell (1983) and Hamed et al. (2014) argued that lack of sufficient knowledge of learners is directly related to their schemata. In particular, if students are able to find the information in their mental stores, they comprehend the text and understand the text organization and the genre of the text that enhance learners' writing skills (Ruddle and Unraue, 1994; Hamed et al. 2014). Therefore, text

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comprehension and text organization can affect the learners' ability in cognitive operations of their writing.

Furthermore, according to Hamed et al. (2014), if learners are familiar with the topic and how to use the text structure, they will be able to use skimming and scanning effectively. Similarly, the finding of this study showed that the background knowledge of students in summarizing the expository text played a significant role in the participant's summary skills. In specific, based on the interview data, participants mentioned that when they have knowledge about certain facts about "ants", it was easier for them to skim the text for selection of main ideas.

Finally, the result of analysis of Research Question 3 showed an interesting fact about using the topic sentence in students' summary drafts. As it was mentioned earlier, some students did not write a topic sentence in their drafts. However, they all read the topic sentences of the reading material to identify the main points. The transition of topic sentences from the source into their drafts was one of the learners' challenges. Sevgi (2016) in this regard, discussed that Second language learners have a lot of challenges to produce the topic sentence. They do not only look for the appropriate content, but also translation of words also makes them to fail in the constructing of a writing essay with appropriate organization. Therefore, in this study, the other reason that students had challenges with writing the topic sentences and paraphrasing the word was a language barrier beside lack of content knowledge which was discussed earlier.

Contributions of the Study

The contribution of the current study can be categorized in two main areas of theoretical and practical contributions. The theoretical contribution focused on the

findings added to the theory of this study, whereas the practical zoomed on the pedagogical aspects of the current study.

Contributions to the Theory. The present study is important because it has some contributions. The first contribution of the current study is developing the recursive-interactive summarizing processing model. The previous studies such as Sarig (1993) and Yang and Shi (2003) looked at the strategies of summarizing. This study went beyond the processes and looked at the learners' shifts between the metacognitive and cognitive strategies of both reading and writing at the same time.

Secondly, this study identified specifically that the metacognitive strategies in summarizing the expository text are planning and assessing and the cognitive strategies are operating strategies. Previous research on summarizing skills did not put a clear boundary between the metacognitive and cognitive strategies.

Thirdly, the current study added to the literature specifically on the relationship between the learners' shift between the three components of the summarizing system. In other words, the direction of the learners' shifts started from the planning, to operating and assessing. Therefore, there is no shift from the operating to the planning in the regular processes. This is unlike previous study (Sarig, 1993) in which there was a shift in direction from planning to operating and vice versa.

Fourthly, the current study investigated the detailed data from the learners' shifts between the metacognitive and cognitive strategies and the learners' application of the metacognitive and cognitive strategies in summarizing the expository text in both reading and writing separately. Previous studies on summarizing focused either on the reading or writing part of summarizing skills or

the researchers just looked at the summarizing skills as one general skill rather than reading and writing parts.

Finally, the result of the current study identified the metacognitive and cognitive strategies used with expository text which was compare-and contrast genre. Previous studies looked at other kinds of genre and not expository texts. Moreover, the taxonomy of strategies modified Sarig's taxonomy (1993) and deleted and added some sub-categories for summarizing the expository text.

Practical implications. In this section, the practical implications of the current study were addressed. Firstly, the current study helps the undergraduates to summarize the expository text effectively by being aware of their metacognitive knowledge and applying both metacognitive and cognitive strategies. As summarizing a task has been challenging for the students in the academic context, this study makes the strategies clearly for the undergraduates to apply them in their academic lessons.

Secondly, this study is beneficial for teachers and lecturers in the sense that they can have a clear picture of the concepts of the learners' processing steps and the types of processing in summarizing the expository text. Furthermore, teachers can teach the learners the metacognitive and cognitive strategies and monitor the learners to apply the strategies properly in the reading and writing parts of summarizing the expository text.

Finally, policy makers, curriculum designers, material developers also will get benefit from this study by using the metacognitive and cognitive strategies in the text books. Therefore, teachers can have a standard guideline to teach the metacognitive and cognitive strategies of summarizing skills and students have the opportunity to follow a standard guideline in their academic context.

Directions and Suggestions for Future Studies

This study investigated the metacognitive and cognitive strategies and the learners' shifts between these strategies. Therefore the current study is the first of its kind in the area of summarizing the expository text by ESL undergraduates.

Further follow-up research on the phenomenon investigated here may consider the following aspects:

a) The in-depth qualitative research could focus on the same metacognitive and cognitive strategies with a large group of participants to see whether the learners' shifts between the metacognitive and cognitive strategies and the metacognitive and cognitive strategies are consistent.

b) Other qualitative studies could investigate the other genre of the original text or use multiple texts to find out the learners' shifts and the metacognitive and cognitive strategies.

c) Studies could be conducted in secondary school on summarizing the expository text or multiple texts.

d) Research on skilled and less skilled writers in summarizing expository texts could shed light on the metacognitive and cognitive strategies and the differences in learners' shifts between them.

Limitations of the Study

There are three main limitations in the study. Firstly, the study is mainly qualitative in nature. Hence, think aloud protocols are the main sources of data collection. In this respect, due to the small number of participants (five), the findings are hard to generalize unless students have the same profile. This is a necessary limitation because of the amount of data to be analyzed from an in-depth

examination of participants' elicited information from the data. Due to the possibility of carrying out an in-depth study resultant from the small number of participants, however, this limitation can be viewed as the strength of the study. Secondly, the number of reading material is the other limitation of the current study. Based on one expository text given in this study it is difficult to generalize all the findings unless the other texts reveal the same strategies and learners' shifts between the strategies. Thirdly, selection of the site of this study is another limitation.. Since the researcher was an international student in the university, there were some limits for her to collect the data from other ESL counties or schools in other countries. Therefore, she chose one of the public universities in Malaysia where she could access the participants and collect the data effectively. Finally, participants' demographic information such as age and gender are not taken into consideration in the study. Moreover, the five participants in this research had similar socio-cultural and educational backgrounds in relation to learning English. The generalizability of findings about their summarizing behaviors from this study thus may not always be applicable to students in other ESL or EFL countries with different socio-cultural and educational backgrounds.

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LIST OF PUBLICATIONS AND PAPERS PRESENTED

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