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結構式筆記分享對於英語閱讀理解成效及閱讀焦慮感之影響研究

The Effects of Sharing Note on English Reading Comprehension and Reading Anxiety

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摘要

本研究針對八年級三十九位學生，採用 Kiewra (2005) 提出的 SOAR 結構化筆記，探討結構化筆記分享對於英語閱讀理解及英語閱讀焦慮感的影響。實驗組共十七位學生，待閱讀英語文章後，開始製作筆記，並於閱讀他人筆記後，進行自我筆記的修改。控制組共二十二位學生，待閱讀英語文章後，進行筆記製作而無分享及觀看他人筆記行為。實驗結果:

1. 結構化筆記分享能提升英語閱讀理解力。
2. 結構化筆記分享能提升場獨立的學習者的英語閱讀理解力。
3. 結構化筆記分享能提升低先備知識學習者的英語閱讀理解力。
4. 結構化筆記分享能降低場獨立的學習者的英語閱讀焦慮感。

基於上述研究結果，本研究亦針對英語教學者提出相關建議與後續研究的方向。

關鍵字：SOAR 結構化筆記；筆記分享；認知風格

ABSTRACT

This study investigated the effects of sharing SOAR method study note, which were proposed by kiewra (2005), on English reading comprehension and English reading anxiety for EFL Grade 8 students. Thirty-nine students participated in SOAR method note making after reading English material online. They were separated into a control group (N=22), which were not allowed to share or read their peers' note after making their note, and an experimental group (N=17), which were permitted to read their peers' note and revise their own note after the note-making activity. The results indicate that students in the experimental group who shared the note outperformed those in the control group who did not share their note. Also, students with field-independent cognitive style or with low prior knowledge who shared the note with their peers made more progress than those with field-independent cognitive style or with low prior knowledge who did not share the note with their peers. In addition, students with field-independent cognitive style who shared the note with their peers had lower anxiety than those with field-independent cognitive style who did not share any notes. Limitations and instructional suggestions were also discussed in the final conclusion.

Keywords: SOAR method, note sharing, cognitive styles

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Chapter 1. Introduction

1.1 Research background and motivation

Reading is an important skill to learning, and reading comprehension is to think and respond to what you read (Tierney, 2005), but it is not an easy task, especially for those who study English as a foreign language (EFL). Many studies claimed that reading strategies enable EFL students to perform well in reading comprehension (Knight et al., 1985; Grabe, 1991; Kern, 1997; Baker, 2004; Tierney, 2005). However, most EFL students in Taiwan are not familiar with those strategies. Without the instruction of reading strategies, they cannot perform a reading task, catch the main ideas or infer something from the reading material well because they are over trained in the way of explaining vocabulary, grammar or sentence patterns, which help them gain linguistic knowledge of the language.

Aside from reading strategies, many studies indicated that reading anxiety can be the predictor of reading comprehension performance (Sairo, et al, 1999; Seller, 2000; Matsuda, S., & Gobel, P.2004; Batista， 2005; Yuan, 1998). Namely, EFL students with low reading anxiety tend to perform much better in reading comprehension than those with high reading anxiety. Therefore, it is a valuable research issue of finding out the way that can decrease the reading anxiety to achieve the goal of good reading comprehension performance for EFL students.

There are many strategies to help EFL students read well, like top-down processing (Goodman, 1970), semantic mapping, ETR (experience, text, relationship) method (Carell, et al., 1989) or SOAR (selection, organization, association, and regulation) study method (Kiewra, 2005). In foreign language learning contexts, EFL students who use reading strategies more often can perform better than those without making use of strategies (Carell, 1989; Devine, 1988). Note taking is one of the reading strategies to effective reading. According to Mahdavi and Azimi (2012), Iranian EFL students who used note taking outperform those who used underlining strategy or without any strategies in reading comprehensibility. In Yang and Lin's study (2015), online collaborative note-taking strategies have positive effects on EFL students' literacy development, which contains reading and writing skills.

Based on the benefits of note-taking strategy in reading for EFL students, the present study utilized SOAR method as a note-taking strategy to examine its effects on promoting English reading comprehension. Kiewra (2005, 2009) indicated that SOAR method is an effective strategy of note taking based on the theory of the cognitive depiction of human information processing system. The acronym SOAR stands for selection, organization, association, and regulation. Students who use SOAR method are instructed as follows. First, they pick up the information in the select stage. Next, they organize the information they selected into graphic order or

matrix frame. Then, they associate the new information internally or externally which can help them put the new information into long term memory. Finally, they self-test by summarizing or proposing questions to make sure their comprehension. According to Kiewra (2005, 2009), SOAR method can prevent students from using weak or redundant reading strategies, such as highlighting without awareness, organizing information into lists, recopying or rereading. A recent study by Chen (2017) indicated that utilizing note-taking strategy with SOAR method is helpful to pupil's Chinese reading comprehension.

Furthermore, the present study emphasized the act of SOAR method note sharing and its effects on English reading comprehension. According to Faust and Paulson (1998), sharing note can help those who have poor note-taking skills to promote their reading comprehension. In Landay's study (1999), students can get different perspectives and fill the gap they missed in class by viewing others' notes through the Notepal system on PDA. Through Reflective Collaboration Note (ReCoNote) system, students can review others' notes and make linking or annotations between their own notes to others' notes, which are related to their learning subjects (Miyake, Masukawa, 2000). The study pointed out that the function of sharing notes helps the students learn actively and well organize what they learn. Furthermore, co-editing system (Kam et al., 2005; O'Neill, 2005), such as Livenote and Slides2wiki, also has sharing function

so that users in the same group can make and share notes with each other, and moreover, users also have the right to revise their peers' notes.

The previous research indicated the positive effects of note sharing on promoting learning performance; however, the research focused on emphasizing the effects of sharing notes on English reading comprehension of EFL students has not been surveyed yet, and most of their research subjects were college or graduate students rather than junior high school students. Therefore, the present study will study the effects of note sharing on EFL reading comprehension of junior high school students. Moreover, since the reading anxiety has strong relations with reading comprehension performance (Baker & Wigfield, 1999; Oldfather & Wigfield, 1996; Rowe, 1991; Wigfield & Guthrie, 1995, 1997; Horwitz, et al.,1986; Sparks & Ganschow, 1996；Sellers, 2000 ; Huang, 2001; Young, 2000), the effects of note sharing on reading anxiety were also examined in this study.

Moreover, Oxford (1990) argued that language learning styles and strategies are the most important factors that influence foreign language learning performance. Because the students frequently made use of reading strategies based on their learning styles (Dunkel, 1988), teachers should take their different styles into account to design the reading activities to meet their needs. Therefore, this study also focused on the cognitive styles, that is, field-dependence (FD) or field-independence (FI) and

confirm whether note-sharing is a practical strategy for field-dependent or field-independent students in promoting their English reading comprehension performance and lowering reading anxiety.

1.2 Purpose of the study

Compared to note-taking without sharing, the goal of the study is to confirm whether note-sharing is a practical strategy of promoting reading comprehension performance and lowering reading anxiety for EFL learners. Thus, this study investigates how sharing SOAR method note-taking influences EFL students' reading comprehension and reading anxiety. In addition, based on the field dependence and field independence cognitive styles, how sharing SOAR method note-taking affects the reading comprehension performance of learners with different cognitive styles is investigated as well as how sharing SOAR method study note influences the reading comprehension performance of learners with high or low prior knowledge, is also investigated.

1.3 Research questions

Based on the research purpose of the study, five research questions are proposed, and listed them as follows:

1. Are there significant differences in English reading comprehension performance and reading anxiety between learners in the experimental group and control group

who share and do not share their SOAR study note with their peers?

2. Are there significant differences in English reading comprehension performance and reading anxiety between the field dependent and field independent learners in the experimental group and control group who share and do not share SOAR study note with their peers?
3. Are there significant differences in English reading comprehension performance and reading anxiety between high prior knowledge group and low prior knowledge learners in the experimental group and control group who share and do not share SOAR study note with their peers?

1.4 Limitations of the study

Due to the time and funding factors, the present study has its limitations which need to be addressed.

1. The experimental subjects are limited to Grade 8 students from two classes at one junior high school in Northern Taiwan. Therefore, whether or not the research results of the study can be transferred ready to students with different ages or academic levels needs to be further studied.
2. Only a total of 39 Grade 8 students are randomly recruited from a junior high school in Northern Taiwan to participate in the instruction experiment due to the difficulty of recruiting research participants. This leads to small size sample, thus

influencing the reliability of statistics inference.

3. The reading material is an essay adopted from *Bees* (PISA 2006), whether the research result of the study can be transferred ready to other forms of articles or not needs to be further studied.

4. This study only focuses on finding out the differences in English reading comprehension performance and reading anxiety between the field dependent and field independent learners in the experimental and control groups who share and not share SOAR study note with their peers. The other cognitive styles have not been considered. Therefore, the research result of the study should not be over inferred to other styles which are not discussed in the study.

5. The purpose of this study is to investigate the effects of sharing SOAR study note in reading comprehension and reading anxiety. Therefore, the research results of sharing SOAR study note cannot be transferred ready to other note-taking strategies.

1.5 Definition of terms

1. SOAR method

Kiewra (2005, 2009) indicated that SOAR study method is an effective strategy of note taking based on the theory of the cognitive depiction of human information processing system. SOAR composes four note-taking steps, including selection,

organization, association, and regulation. In terms of "selection," learners have to select the important information from reading materials and keep it in short-term memory temporally. In terms of "organization," learners have to categorically organize the information so that the information can be stored into long-term memory. In terms of "association", in order to help encode information from short-term memory to long-term memory, learners have to build connections among new information and associate new ideas with previous knowledge they have already stored in memory. And the last step, in terms of "regulation," learners have to use self-regulate skills, such as summarizing the text or generating the questions from the information, to ensure their reading comprehension.

2. Note sharing

Note sharing is an act of sharing something that someone has already written down on paper or digital device during the lecture. According to Faust & Paulson (1998), note-sharing can help learners, especially who are not good at taking note, get useful knowledge from others' notes. Moreover, note sharing can help poor note takers do the note more correctly and efficiently. There are two types of sharing—sharing after doing one's own note (Landay, 1999; Miyake & Masukawa, 2000; Singh et al., 2004) and sharing while doing collaborative note taking (Kam et al., 2005; O'neill, 2005; Wu et al., 2009). When learners finish taking their own notes, they can

correct or add something on their own notes after browsing others' notes. But if learners co-edit the notes on the web, such as wiki or blog, then they can revise something that is not written well by themselves. Sharing after doing ones' own notes will be adopted in this study.

3. Cognitive styles

Cognitive styles refer to individual differences in ways of acquiring and processing information (Ausburn & Ausburn, 1978). There are many divisions of cognitive styles, such as field dependent (FD) and field independent (FI) (Witkin et al, 1954), impulsivity-reflectivity dimension (Kagan 1966), or visualizer-verbalizer dimension (Paivio, 1971; Richardson, 1977). This study adopted the dimension of FD and FI as the way to categorize the cognitive styles of students. Field-dependent learners are social-oriented, and are fond of natural and face-to-face communication and more successful with inductive instructions (Brown, 2000). In contrast, field-independent (FI) people are more self-confident, and tend to be less social-oriented and good at organizing the text (Rickards, 1997), and they are more successful with deductive instructions (Abraham, 1985).

Chapter 2. Literature Review

2.1 Note sharing

Knowledge sharing is a "voluntary act" (Davenport, 1997), and related to communication (Hendriks, 1999). In organizations, knowledge sharing is an efficient way that employees utilize knowledge or create new knowledge to enhance the competitiveness of organizations (Jackson, Chuang, Harden, Jiang, & Joseph, 2006). When someone shares their knowledge, they do not lose their own knowledge, not like the other forms of sharing, like sharing the food with friends, which may lead to material sacrifice on the sharers (John, 2012). On the contrary, knowledge sharing can help sharers gain more if more participants contribute to the task.

At school, according to social constructivism, through the process of sharing experiences or discussion, students would learn more to construct their knowledge than working alone (Vygotsky, 1978). Generally, students take notes and share with their peers in or after class. Sharing note, regarded as a form of knowledge sharing, can help those who are not good at taking note to get the main points. Poor note takers may listen carefully in the lecture, but they cannot catch the main points and write them down efficiently and correctly, or they may have gaps, that is, leave the note all blank or write incomplete ideas or concepts in their notes. Obviously, working in pairs to read others' note can help poor note takers fill the gaps (Faust & Paulson, 1998).

Several note-taking systems were designed to facilitate learning with the support of note sharing features. For example, Notepals (Landay, 1999), a PDA note-taking, allows students to take note in class and read others' notes after class (Landay, 1999). Reflective Collaboration Note (ReCoNote) is another note-taking system providing with note sharing function. Students can make relations among others' notes (Miyake, & Masukawa, 2000), and make comments to each other on the notes. By sharing and reading others' notes, students re-organize what they have written. The result showed that students who consistently utilized the system outperformed other students in writing high-quality summaries.

Livenote is another example. It is a co-editing system that students can take note with their team members cooperatively. The result showed that students who use cooperative Livenote tended to be more comprehensive to the lecture, to have more interactions to the whiteboard activity provided by the system, and to make high quality notes than those without using Livenote (Kam et al., 2005).

With the development of computer technology, many studies have indicated that online collaborative note-taking helps learners when they share notes with their peers (Lo et al., 2013; Türk & Erçetin, 2014). However, in Katayama and Crooks' study (2003), there were some pitfalls for learners when they used shared electronic note-taking system. They tended to copy and paste their peers' note without thinking

what they wrote. Although they might have more contents in their notes by plagiarizing others' note, they could not really understand and encode what they write in their long-term memory through the online note sharing process (Bauer and Koedinger, 2006).

Since the positive and negative effects of note sharing application on learning examined in the previous study, the present study investigated what note sharing affects English reading comprehension and English reading anxiety of EFL learners.

2.2 Note taking and SOAR

According to Di Vesta and Gray (1972), note-taking includes the process of encoding information and proceeding external storage. It is a process of transformation that deals with the coming information, switches into related material, organizes the text (Di Vesta & Gray, 1972), and then to get into long-term memory of the learner. It can help learners recall what they have learned in class. Besides, note-taking has positive effects on learners' class participation and test performance (Kiewra & Benton, 1988) as well as students who took notes are more attentive in class than those did not take notes (Kiewra, 1987). Mahdavi and Azimi (2012) indicated that Iranian EFL students who used note taking outperformed those who used underlining strategy or without any strategies in reading comprehensibility. In Yang and Lin's study (2015), online collaborative note taking strategies have positive

effects on EFL students' literacy development, which contains reading and writing skills.

Unfortunately, note taking is not an easy skill even to college students. In Jairim and Kiewra's study (2009), it is hard for college students to write complete note and organize information well. They often fragment the text rather than integrating them into "one". However, teaching students to take notes effectively is important for their learning. Based on the human information processing theory, Kiewra (2005) proposed to use SOAR study method as an effective strategy of note taking. SOAR stands for four steps of note-taking, which are, Selection (S), Organization (O), Association (A), and Regulation (R). These four steps are corresponded to the mechanisms of information processing. The information processing system and the cognitive processing mechanisms of SOAR are showed in Fig. 2.1.

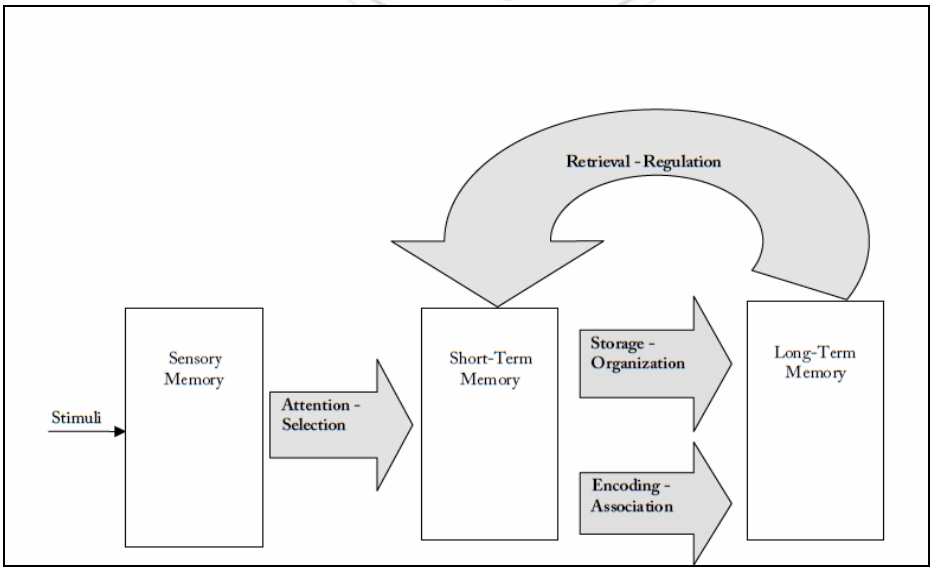

Fig. 2. 1 Information processing and the SOAR components (Jairam & Kiewra, 2009)

The first step in SOAR is "Selection." In the step, learners pick important ideas

from the information they have gotten so that these key ideas can be attended and go to their short-term memory from their sensory memory, waiting for next processing. To make effective use of the selected points, in the step of “Organization”, learners have to organize the key points they selected in order to store them into the long-term memory. Then, in the step of “Association”, like an encoding process, to help learners encode information from short-term memory to long-term memory, learners build connections among new information and associate new ideas with previous knowledge they have already stored in long-term memory (Mayer, 1996). And the last step “regulation” in SOAR, as a retrieval process, learners use self-regulated skills, such as summarizing the text or generating the questions from the text, to ensure their comprehension.

In Jairam and Kiewra’s study (2009, 2010), it was found that college students performed better in computer-based reading comprehension when they employed complete SOAR method than those who only utilized partial SOAR strategy. Chen (2017) indicated that utilizing SOAR method is helpful to pupil’s reading comprehension. Due to the benefits of the SOAR method to the students’ reading comprehension (Jairam & Kiewra’s, 2009; Jairam & Kiewra’s, 2010; Chen, 2017) the study utilized SOAR method as a note-taking strategy to promote EFL students’ English reading comprehension.

2.3 Cognitive styles and English reading comprehension

Witkin, Moore, Goodenough, and Cox (1977) asserted that cognitive styles are individual differences in the way that people perceive, think, learn, and solve problems. Cognitive styles refer to individual differences in ways of acquiring and processing information (Ausburn & Ausburn, 1978). There are many divisions of cognitive styles, such as field dependency (FD) and field independency (FI) (Witkin et al, 1954), impulsivity-reflectivity dimension (Kagan 1966), or visualizer-verbalizer dimension (Paivio, 1971; Richardson, 1977), but the FD/FI cognitive styles are most widely discussed cognitive styles in the e-learning field.

Field-independent (FI) people tend to distinguish parts from a whole and concentrate on something without being disturbed by the neighboring variables; whereas, field-dependent (FD) people tend to see the whole picture, and perceive the general configuration of a problem or idea (Brown, 2000). According to Witkin and Goodenough (1977), field-dependent (FD) people are social-oriented, and are fond of interacting with others. In contrast to field-dependent people, field-independent (FI) people are more independent, self-confident, and tend to be less social-oriented. According to Brown (2000), learners who tend to be field-dependent are fond of natural and face-to-face communication, and they are more successful with inductive instructions. Learners who tend to be field-independent are good at organizing the text

(Rickards, 1997), having attention to details, and mastering in exercises or drills, and they are more successful with deductive instructions (Abraham, 1985).

Also, many studies indicated that learning strategies should go with learners' cognitive styles in order to promote English learning performance. In Lin's study (2016), field-dependent students who used the scaffold of cognitive reading strategies combined into Collaborative Digital Reading Annotation System (CDRS) performed well in English reading comprehension; however, there were no significant differences in English reading comprehension for field-independent learners whether they used cognitive reading strategies or not. Besides, in Lin's study (2014), a brainwave attention diagnosis and review system assisted English learning for paper-based reading with digital pen was developed to compare with an autonomous diagnosis and review system for paper-based reading with digital pen. The result indicated that field-dependent learners with the attention review and diagnosis system significantly outperformed the ones with the autonomous diagnosis and review system in English learning, but there were no significant difference in English learning performance for field-independent learners whether they used brainwave attention or diagnosis or not.

In addition, to investigate the effects of reading process to field-dependent and field-independent learners in English reading comprehension, top-down and

bottom-up reading strategies were utilized for both cognitive styles of freshmen students. As a result, top-down process was beneficial for the field-dependent learners, whereas bottom-up reading process was helpful for the field-independent learners (Fatemi et al., 2014).

Therefore, to help EFL students learn effectively and efficiently in class, teachers have to take students' cognitive styles into account to make the lesson plan. Thus, this study examined whether or not note-sharing has positive effects on English reading comprehension for EFL learners with FI or FD cognitive styles.

2.4 Foreign language anxiety

The language anxiety plays an important role in second language learning (Brown, 2000). According to the affective filter hypothesis proposed by Krashen (1985), learners with low affective filter tend to be more risk-taking, but those with high affective filter may experience stress and anxiety in the second language learning. Horwitz et al., (1986) defined foreign language anxiety as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (p.128). Furthermore, foreign language reading anxiety is distinguished from general foreign language anxiety that comes from listening and speaking activities. Reading anxiety is elicited from unfamiliar scripts, writing system, and cultural materials. According to

Saito, et al., (1999), they found that learners' reading anxiety increases when they perceive the difficulty in their foreign language reading. Students with lower reading anxiety outperform those with high reading anxiety in their reading comprehension. In Seller's study (2000), highly anxious students recall less information from the reading text than those with low anxiety. Particularly, important text is hard to be recalled because of the reading anxiety. Seller et al., (1999) also indicated that students with higher reading anxiety tend to be more distracted from the task than those with lower reading anxiety.

Because of the negative effects of reading anxiety, how to reduce EFL students' reading anxiety for promoting their reading comprehension is an important issue. Many strategies are suggested to reduce the learning anxiety in the foreign language class, such as helping learners examine their anxiety, playing games with the language, working in small groups, or providing learning scaffoldings (Magno, 2010; Young, 1991). However, the relationship between sharing note and reading anxiety is still not examined. Therefore, this study investigated the effects of note sharing on reading anxiety of EFL students.

Chapter 3. Methodology

3.1 Research architecture

This study aims to investigate the effects of SOAR note sharing on English reading comprehension performance and reading anxiety in a digital reading environment. Additionally, the differences of English reading outcomes between students with different levels of prior knowledge and different cognitive styles were also studied. The research architecture of the present study is shown in Fig. 3.1. The independent variable, dependent variables, and background variables are respectively described as follows.

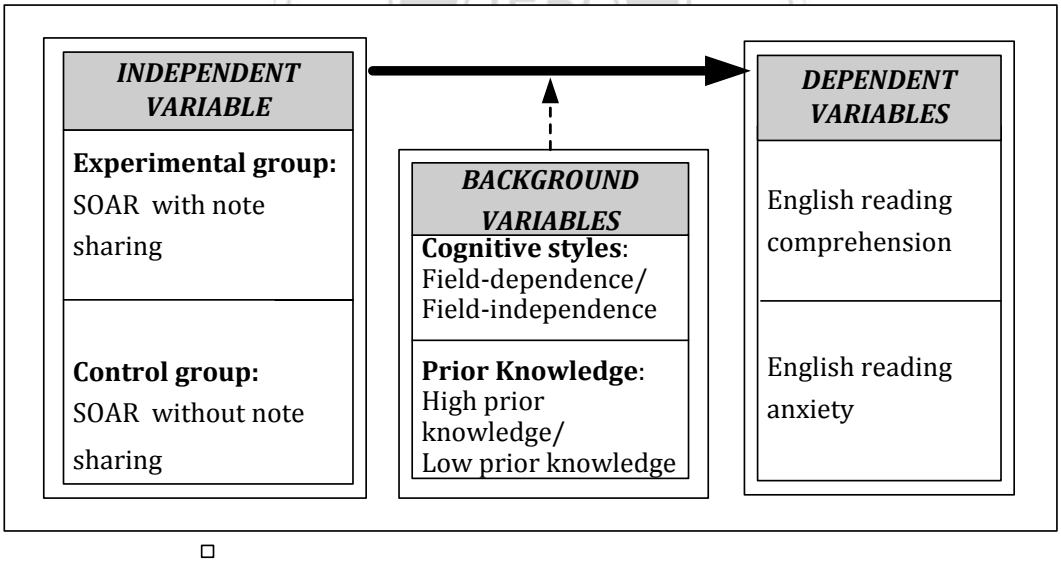

Fig 3. 1The research architecture of the present study

3.1.1 Independent variable

The independent variable of the study is SOAR with or without note sharing. The learners in the experimental and control groups respectively adopted SOAR with and

without note sharing to support their digital reading activities, and detailed as follows:

1. Control group: Students take notes by means of SOAR method, but they are not allowed to share or browse other learning peers' notes.

2. Experimental group: Students take notes by means of SOAR method, and after doing their own notes in each stage, they are allowed to share or browse other learning peers' notes, and revise their notes.

3.1.2 Dependent variables

The dependent variables of the study contain English reading comprehension performance and English reading anxiety, and detailed as follows:

1. English reading comprehension performance: English reading comprehension performance refers to the outcome of English reading comprehension test applied after SOAR method note taken by the students. The higher scores that the students get mean the better English reading comprehension they have and vice versa.

2. English reading anxiety: English reading anxiety refers to the assessment outcome of Foreign Language Reading Anxiety Scale designed by Saito et al. (1999). The higher scores that the students get mean the higher English reading anxiety they have and vice versa.

3.1.3 Background variables

The background variables of the study are cognitive styles and prior knowledge,

and detailed as follows:

1. Cognitive styles: The students are categorized as field-dependency (FD) or field-independency (FI) based on the scores they get from the Group Embedded Figure Test (GEFT). Students are categorized as FD if their GEFT scores are lower than average score, while learners are categorized as FI if their GEFT scores are higher than average score. This study examined the differences in English reading comprehension performance and reading anxiety between the FI and FD students who share or do not share SOAR notes with their peers.

2. Prior knowledge: Based on the scores of the research participants that get from the reading comprehension test before they read the learning material *BEE*, the students are categorized as the high prior knowledge group with their scores higher than average scores and the low prior knowledge group with their scores lower than average scores.

3.2 Research Participants

A total of 39 grade 8 students from two classes of a public junior high school in Northern Taiwan were recruited to participate in this study. Their age was between thirteen to fourteen years old. There were 11 boys and 11 girls in the control group; 10 boys and 7 girls in the experimental group. The students have four English courses per week.

3.3 Research design

The quasi-experimental design is used in the present study. Research participants are from two classes at the same junior high school in Northern Taiwan. One class is assigned as the experimental group using SOAR with note sharing while the other one is assigned as the control group using SOAR without note sharing. Both groups learned the SOAR method and made notes of an English article, *Bees*. Students in the experimental group shared notes with their learning peers and made revisions of their own notes using an online SOAR note-taking system. In the control group, students used the system to make their notes without sharing them with their learning peers. An English reading comprehension test corresponding to the learning article was developed by the study and was administered to both groups before and after the experiment. Besides, a questionnaire survey was also used to investigate students' English reading anxiety after the note-taking and sharing activities.

Aside from the quasi-experiment, semi-structured interview was applied in the present study in order to gain the qualitative information. In the interview, both control and experimental group students were asked how they think and feel about doing and sharing SOAR method note around 15 minutes.

3.4 Experimental procedure

The experimental procedure is shown in Fig. 3.2. The experiment was performed

in two days. In the first day, the learners in the control and experimental groups took 15 minutes to complete the Group Embedded Figure Test (GEFT). After finishing the test, there would be a 30-minutes SOAR teaching section instructed by the researcher. The learners in the both groups learned the operation of the note-taking system and the SOAR method. A reading material, *Table Manners*, was provided for learners to practice the four note-taking steps of the SOAR method.

On the Day 2, there would be a pretest of reading comprehension of text *Bees* selected from PISA 2006 for both the groups' learners. After finishing the pretest, both the groups' learners started to perform screen-based reading with text *Bees* for 20 minutes. In this stage, they could use online dictionary or translation resources to understand the reading text. After reading the article *Bees* for 20 minutes, the control group learners would make a note by means of SOAR method for 58 minutes, but they could not share or browse other peers' notes. The experimental group learners would make a note and share and read other peers' notes in each stage. After the SOAR study note was finished, both the groups' learners would conduct the post-test of Foreign Language Reading Anxiety Scale (FLRAS) and reading comprehension.

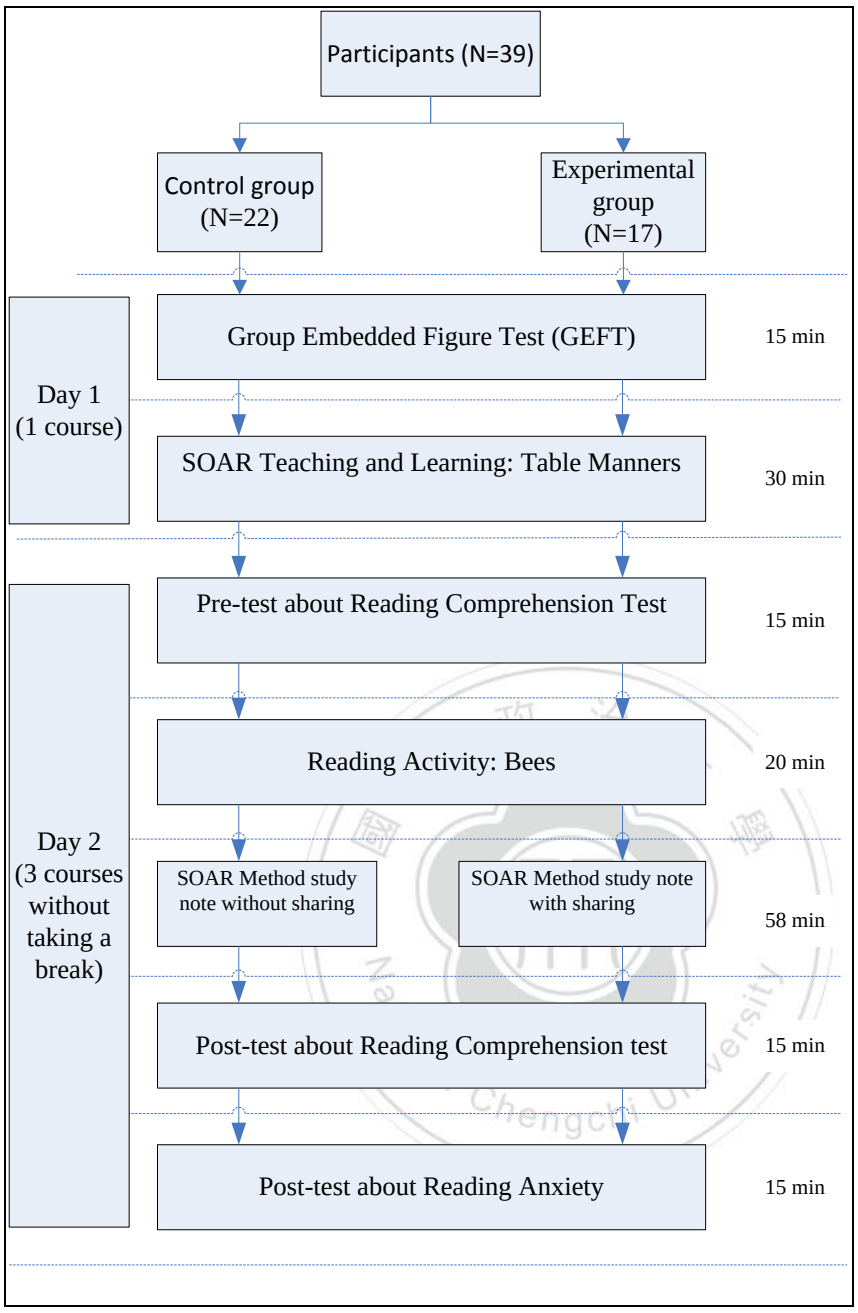

Fig 3. 2 The procedures of the experiment

Figure 3.3 shows the detailed processes of SOAR method study note with sharing or without sharing after reading activity. The note-taking time was designed as follows. “Selection” and “organization” stages were respectively designed with 5-minutes activity, whereas “association” and “regulation” were respectively designed with 8-minutes activity. There would be 8 minutes for learners in the experimental

group to share what they wrote or revised their note after each learning stage. They could read their peers' notes on the screen by clicking on the school numbers of the dropdown list. Then copy the notes they need, and paste them in their notes. They could also revise and reorganize the notes copied from peers. In contrast, the learners in the control group were not allowed to share or browse other peers' note. They took a note by means of SOAR method with a total of 58 minutes. "Selection" and "organization" stages were respectively designed with 13 minutes activity, whereas "association" and "regulation" were designed with 16-minutes activity.

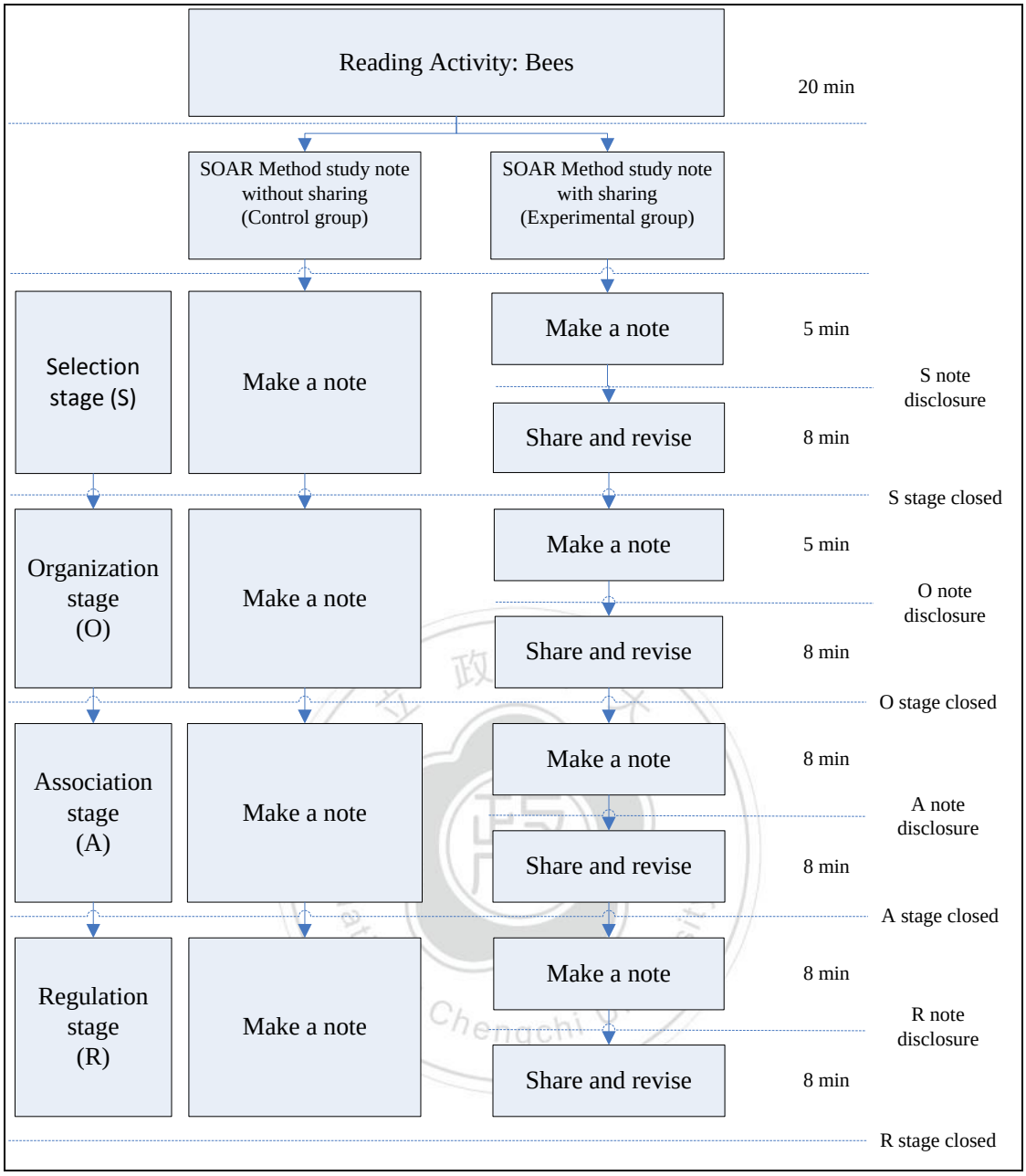

Fig 3. 3 Detailed processes of SOAR after reading activity

3.5 Research instruments

3.5.1 SOAR note-taking system in the Moodle system

The note framework in the present study was designed based on SOAR method (Keiwra, 2005, 2009) in the Moodle system. Students use their school ID numbers as

the accounts and passwords to login the system.

Fig 3. 4**The page of entering**

After entering the system, navigation bars are shown on the left side of the screen.

Fig 3. 5 The page of navigation bar

After clicking on “My course”, the linking to the SOAR method note course will be displayed below the bar “My course” and also on the right of the screen.

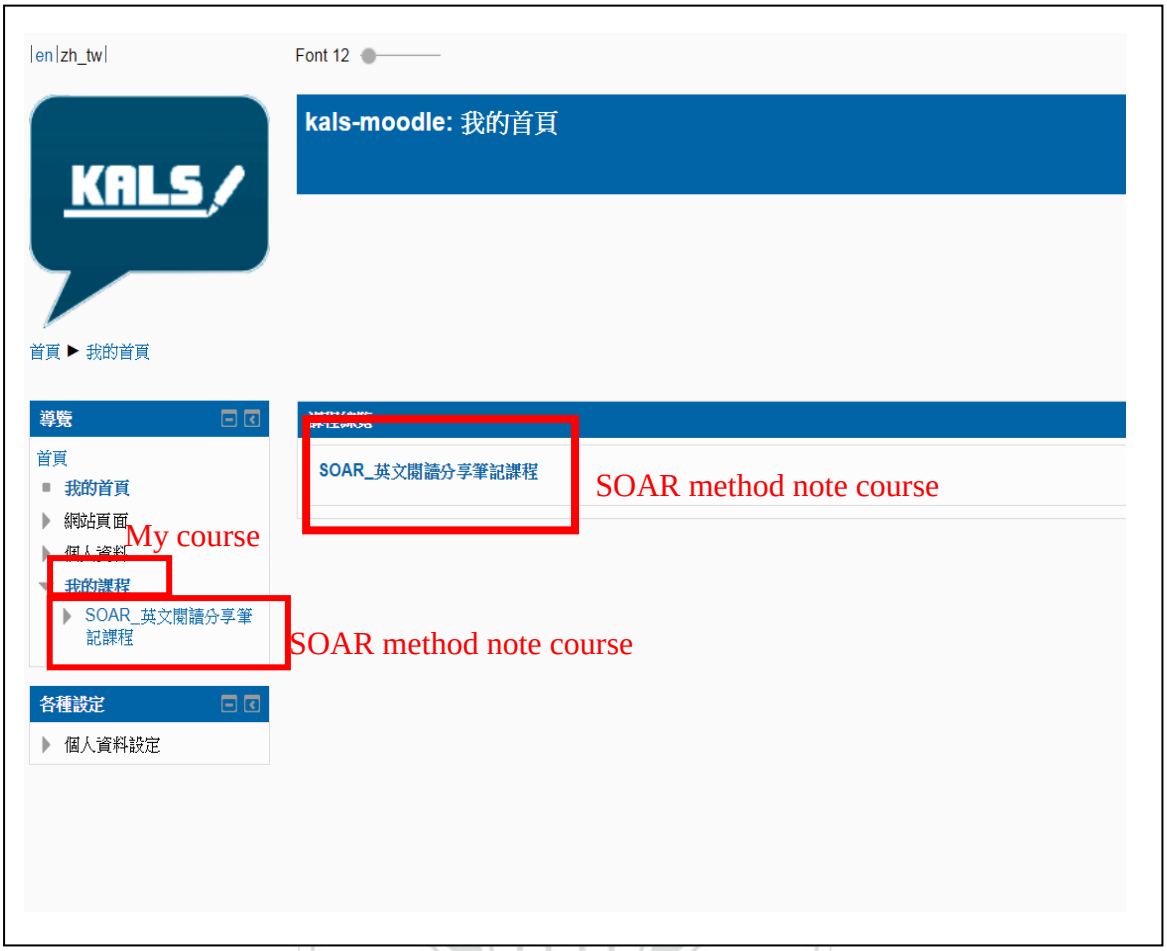

Fig 3. 6The page of my course

Then, after clicking on "SOAR method note course", the practicing area, which contains the linking of reading material *Table Manners* and four steps of SOAR method note is displayed on the top of the right side of the screen. The formal reading area, which contains reading material *Bees* and four steps of SOAR method note, is displayed below the practicing area. Students have to go through the practicing area before doing the formal reading.

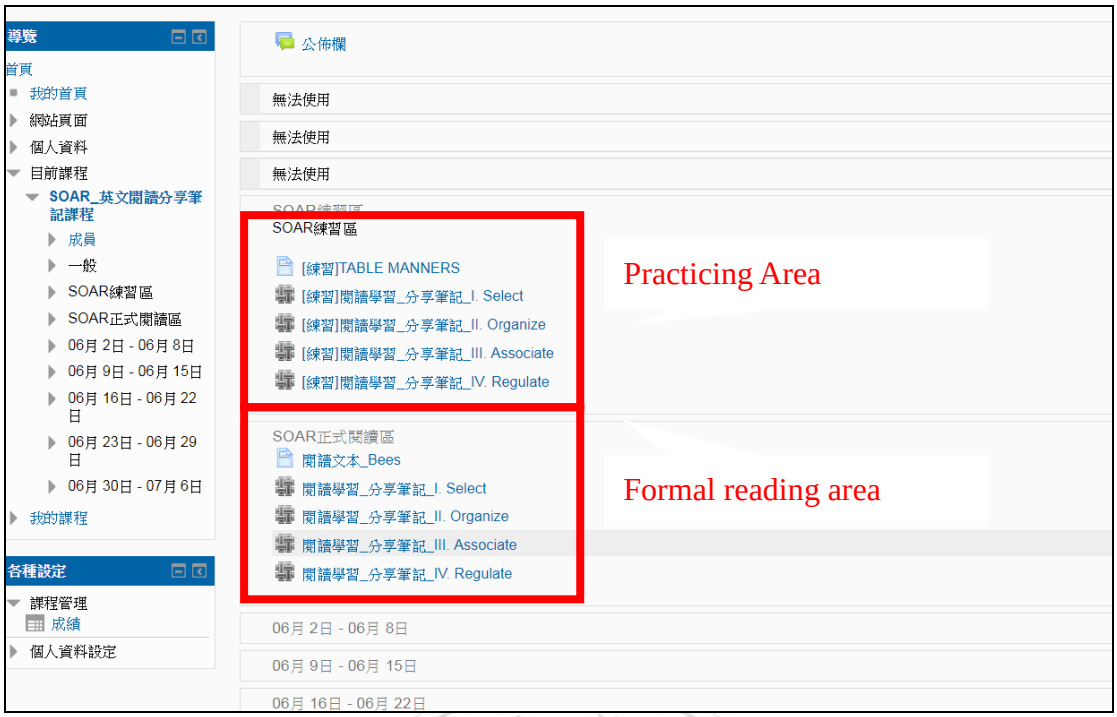

Fig 3. 7The page of linking to practicing and formal reading area

The reading text will be displayed on the right side of the screen after clicking on Bees.

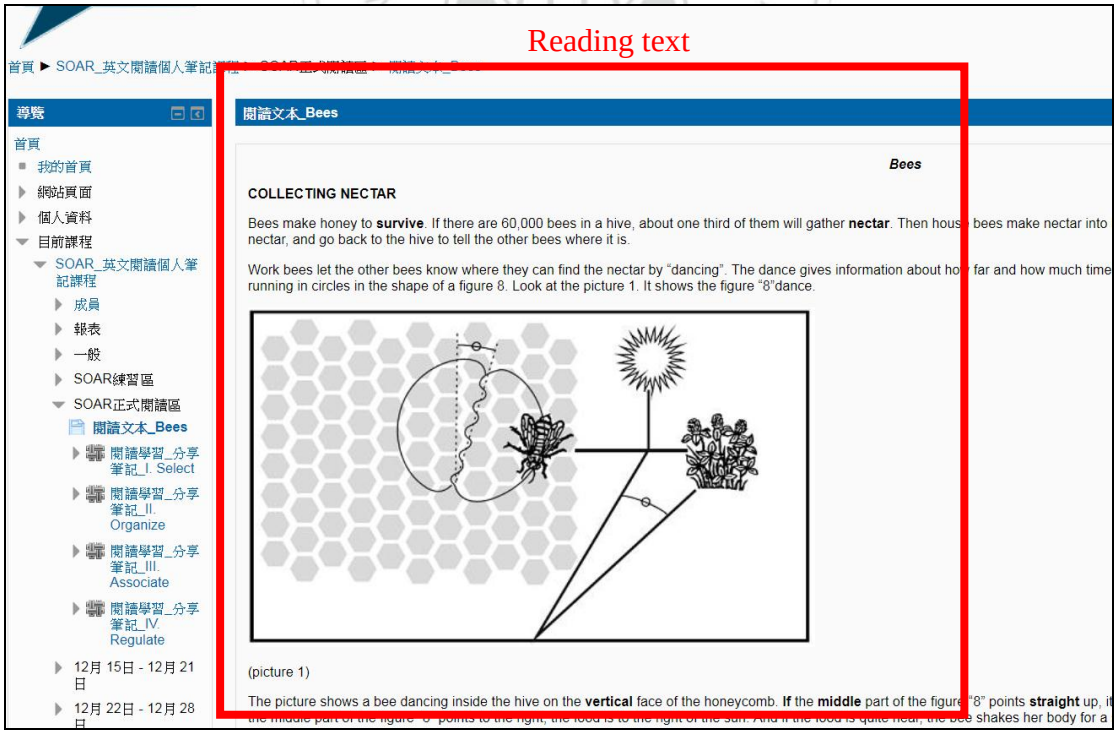

Fig 3. 8The page of reading text

After entering reading material *Bees*, the four steps of SOAR method note, that is,

select, organize, associate and regulate, will be displayed on the left side of the screen.

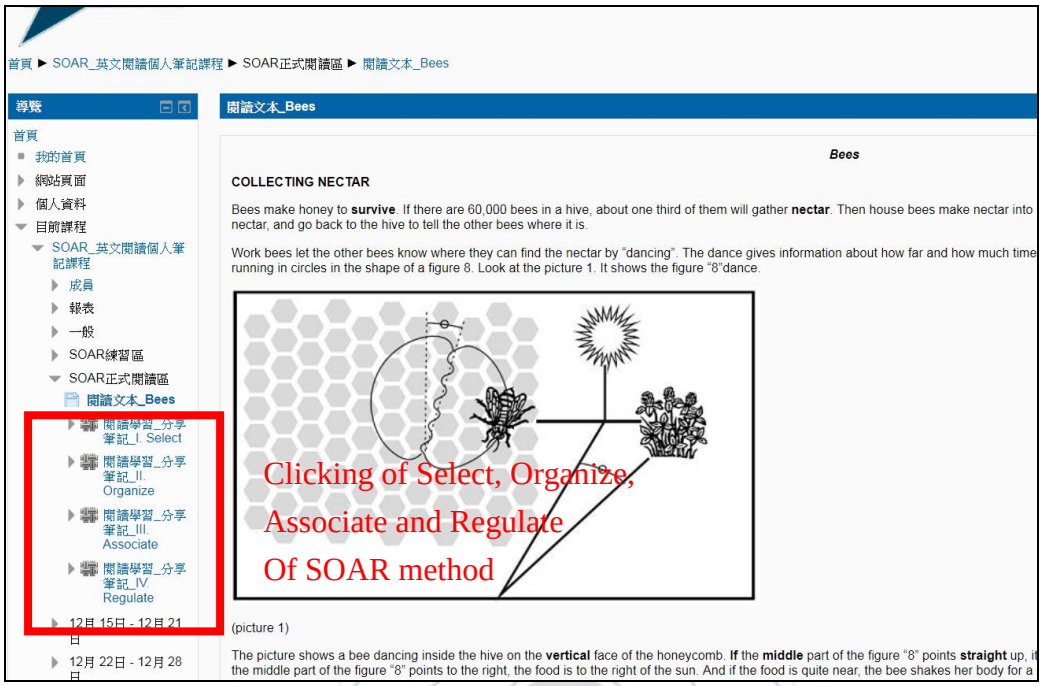

Fig 3. 9 The page of linking to four steps of SOAR: select, organize, associate and regulate

After clicking on "Select", the question of selection of SOAR method will be illustrated below the reading text. And the students has to press "create new page" before they answer the question.

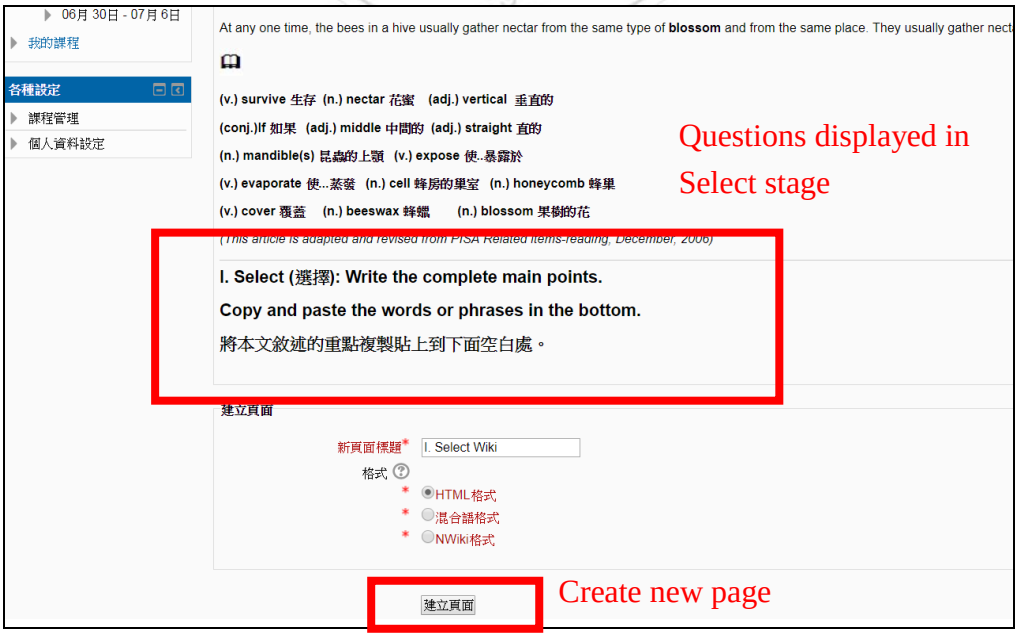

Fig 3. 10 The page of entering the step of "select"

The students answer in the Select Wiki column and press the button “Save” to save their answers.

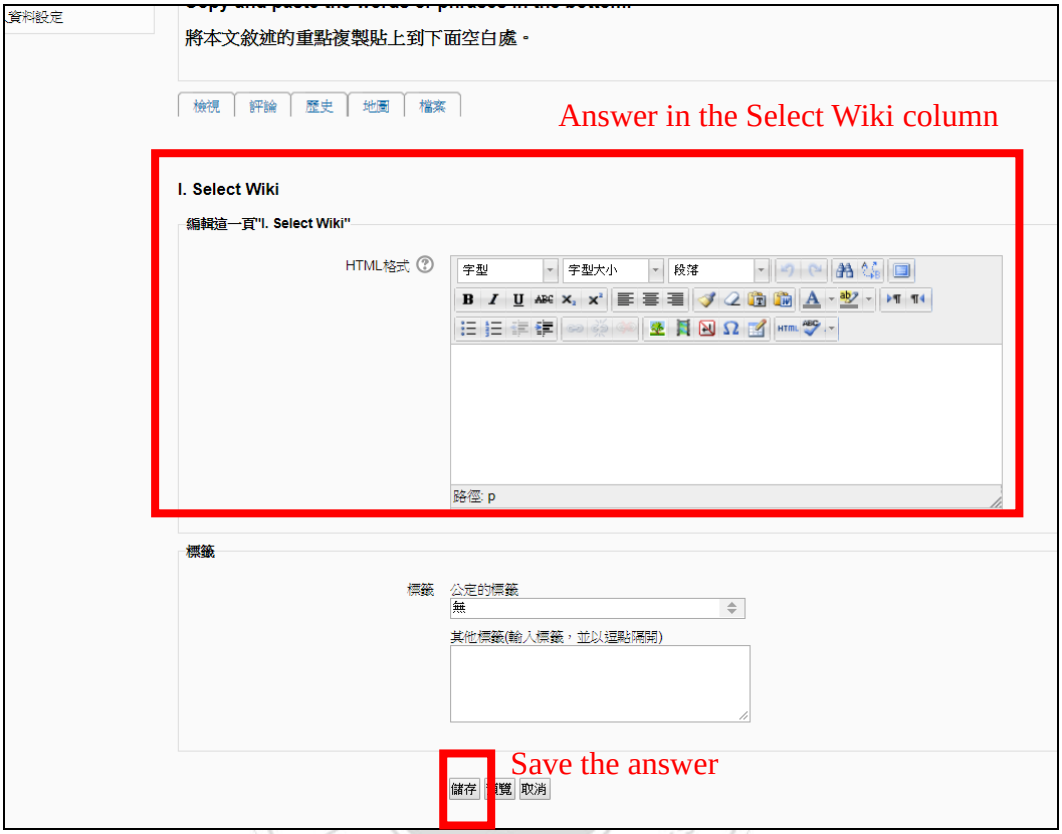

Fig 3. 11The page of answering column after creating new page

The rest of other steps of SOAR method note are the same with the steps of “select”.

But different from the control group students, the experimental group students will share their notes with their peers after finishing the note in each step of SOAR method. The proposed system provides the dropdown list of the school numbers for the experimental group students, so they can choose to read others’ notes according to the school numbers after they click on “view” button.

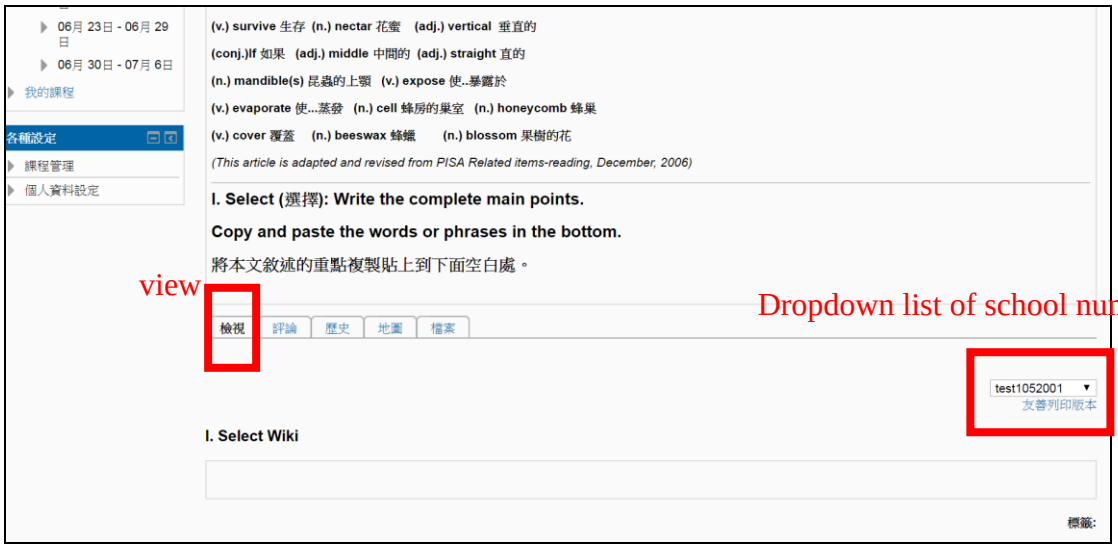

Fig 3. 12The page of dropdown list of school numbers for experimental group to view peers' notes

3.5.2 SOAR method note taking design

According to the article *Bees*, the present study designed the SOAR method note taking framework as follows.

I. Select:

In the “select” stage, students select the main ideas or key words from the article, and then copy and paste what they chose in the column.

II. Organize:

In the “organize” stage, to help the students organize the main ideas or key words that they pasted in the column, the note taking frameworks were designed as matrices.

In the matrices, the students write down the subtitles and categorize the main points about the subtitles. For example, the students can add the subtitles as “work bees” and “house bees”, and categorize the main points into “work bees” column or “house bees” column.

Subtitle 1	**Subtitle 2**

III. Associate:

In the “associate” stage, to help the students build connections among new information from the article *Bees* and associate new ideas with previous knowledge they have already had, the note taking frameworks were designed into two parts as follows.

A. In the article *Bees*, work bees and house bees have different jobs, and they cooperate with each other to make honey. Can you think of other animals or human beings that they work together with their partners like bees? Please write them down. You can answer in Chinese or English.

Animals/Human beings	**Behavior of cooperation**
Eg. football players	In the football match, someone plays as a current front, center and goalkeeper in order to win the game.

B. The bees cannot speak a language, but they can communicate through figure 8 dancing or shaking their abdomens to tell bees where the food is. Can you think of some behaviors or signals that animals or human beings use to exchange the information or send a message? You can answer in Chinese or English.

Animals/Human beings	**Behavior**	**implication**
Eg. Human beings	Put the index finger on the lips	Keep quiet

IV. Regulate:

In the last stage “regulate”, the students were asked to raise some questions about the article *Bees* to test themselves to ensure the students’ reading comprehension. They can answer in Chinese or English. Example: What is house bees’ work?

_____

_____

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3.5.3 English reading comprehension test

The reading comprehension test was designed according to the article *Bees* from PISA Related items-reading, December, 2006. It contains 10 multiple choice questions and 5 short answer questions. The full marks of the reading comprehension test are 100 points. The scores of the multiple choice and short answer are 50 points, respectively. The test was designed by the study, revised by two experienced English teachers, one biography teacher and a professor. The test was designed according to

the revision of Bloom's taxonomy of educational objectives (Anderson & Krathwohl, 2001).

Table. 3. 1 The design of English reading comprehension test based on revision of Bloom's taxonomy of educational objectives

cognitive process dimension / knowledge dimension	Remember	Understand	Apply	Analyze	Evaluate	Create
factual knowledge	●●● ●●	●●		●●		
conceptual knowledge		●●● ●●●				
procedural knowledge						
meta-cognitive knowledge						

The items of the pre-test and post-test are the same, but the items and answer sets are put in different orders to avoid memory effect.

3.5.4 Group Embedded Figure Test (GEFT)

The present study adopted the Chinese version of Group Embedded Figure Test (GEFT) adapted by Wu (1987) to divide all the research participants into field-dependence (FD) and field-independence (FI) learners. Generally, respondents who are over 10 years old are qualified to take Group Embedded Figure Test (GEFT). The test provides 8 simple Geometric shapes. Respondents are asked to identify these

simple figures from complex figures given in the test. The GEFT is administered in three phases. Each phase provides different geometric shapes and the respondents have to find out those specified simple shape hidden in the complicated figures. The difficulty of the test task increases with phases. The scores are given in terms of the accuracy and the speed of response. The higher scores the respondents get, the more tendency to FI they will be.

3.5.5 Foreign Language Reading Anxiety Scale (FLRAS)

Foreign Language Reading Anxiety Scale, which was designed by Saito et al., (1999) was adapted and translated into Chinese to investigate students' reading anxiety in the present study. It contains 20 items (see Appendix B) and its internal consistency reliability is Cronbach's alpha=0.85, N = 130. The factor analysis results show that the scale involves three reading anxiety facets: grammar and vocabulary anxiety (Question 1,2,3,6,7,8,9,10,11), reading confidence anxiety (Question 4,5,12,13,14,15,16,17,18) and culture gap anxiety (Question 19, 20).

Question 12, 13, 14, 16, and 18 are reverse questions in the scale. The items are rated along a 5-point Likert scale. Students have to answer each item from 1 to 5, with 1 = strongly disagree, 2 = disagree, 3 = disagree and agree are equal, 4 = agree, and 5 = strongly agree. The higher the scores that the students get, the higher English reading anxiety they have.

3.6 Data analysis

To investigate the effects of sharing SOAR note on junior high school students' English reading comprehension performance and reading anxiety, SPSS was adopted to analyze the experimental data. One-way ANCOVA and independent samples t-test were used to examine the learning effectiveness and outcome differences. The statistical analysis used for each research question is stated as follows.

1. **Are there significant differences in English reading comprehension performance and reading anxiety between learners who share and do not share their SOAR study note with their peers?**

   In the present study, one-way ANCOVA was used to analyze if there are significant differences between the control group (not sharing SOAR study note) and the experimental group (sharing SOAR study note) in English reading comprehension performance by using learners' pre-test scores of the English reading comprehension test as the covariate. Besides, to investigate the effects of sharing SOAR study note on English reading anxiety, independent samples t-test was used to analyze the differences between the control group (not sharing SOAR study note) and the experimental group (sharing SOAR study note).

2. **Are there significant differences in English reading comprehension performance and reading anxiety between the field dependent and field**

independent learners who share and do not share SOAR study note with their peers?

To explore whether learners with different cognitive styles were benefited differently from note sharing activity, learners were classified as FI or FD by their GEFT scores first. One-way ANCOVA was then used to analyze the differences of English reading comprehension performance between FI learners in the control and experimental groups and between FD learners in the two groups by using their pre-test scores of the English reading comprehension test as the covariate. Besides, to investigate the effects of sharing SOAR study note on FI and FD learners' English reading anxiety, the independent samples t-test was used to analyze the differences of learners' reading anxiety between FI learners in the control and experimental groups and between FD learners in the two groups.

3. **Are there significant differences in English reading comprehension performance and reading anxiety between high prior knowledge group and low prior knowledge group of learners who share and do not share SOAR study note with their peers?**

To explore whether learners with high or low prior knowledge was benefited differently from note sharing activity, learners was classified as high prior knowledge group or low prior knowledge group by their pre-test of English

reading comprehension test first. One-way ANCOVA was then used to analyze the differences of English reading comprehension performance between learners with high prior knowledge in the control and experimental groups and between learners with low prior knowledge in the two groups by using their pre-test scores of the English reading comprehension test as the covariate. Besides, to investigate the effects of sharing SOAR study note on high prior knowledge group and low prior knowledge group of learners' English reading anxiety, the independent samples t-test was used to analyze the differences of learners' reading anxiety between learners with high prior knowledge in the control and experimental groups and between learners with low prior knowledge in the two groups.

Chapter 4. Experimental Results

4.1 Participants background

A total of 39 Grade 8 students aged from 13 to 14 were recruited from two classes of a public junior high school in Northern Taiwan, to participate in this study. One class with 17 students was randomly assigned to the experimental group sharing their SOAR study notes with their peers for English reading and the remaining class with 22 students was randomly assigned to the control group not sharing their SOAR study notes with their peers for English reading. They are all native Mandarin speakers as well as have learned English as foreign language about 8 years.

As shown in Table 4.1, 39 participants were divided into field-dependence (FD) and field-independence (FI) learners based on the Chinese version of Group Embedded Figure Test (GEFT) adapted by Wu (1987). The learners in the both groups were categorized as FD if their GEFT scores are less than the average, whereas the learners were categorized as FI if their GEFT scores are higher or the same as the average. In the present study, there were 9 FI and 8 FD learners in the experimental group; 9 FI and 13 FD learners in the control group.

Table 4. 1 Number of different cognitive styles learners of research participants in both groups

Group	FI	FD	Numbers of learners
Experimental group	9	8	17

Control group	9	13	22
Total	18	21	39

As shown in Table 4.2, 39 participants were divided into the groups of high prior knowledge or low prior knowledge based on the pre-test scores of English reading comprehension test. The participants were categorized as the group of high prior knowledge as if their pre-test scores are higher than the average; whereas, the participants were categorized as the group of low prior knowledge if their pre-test scores are lower than the average. In the present study, there were 7 learners with high prior knowledge and 10 learners with low prior knowledge in the experimental group; 11 learners with high prior knowledge and 11 learners with low prior knowledge in the control group.

Table 4. 2 Number of different prior knowledge levels learners of research participants in both groups

	High prior knowledge	Low prior knowledge	Numbers of learners
Experimental group	7	10	17
Control group	11	11	22
Total	18	21	39

Before the experiment performed, independent samples t-test was used to analyze the differences of initial English reading ability between the control and experimental groups based on the pre-test of English reading comprehension. Table

4.3 shows the results. Analytical results show that there were no significant differences of English reading ability between the experimental and control groups (t=.785, p=.438 > .05). The result confirms that both the groups have the same prior knowledge of English reading comprehension.

Table 4. 3 Analysis of difference in English reading ability between the control and experimental groups based on the pre-test of English reading comprehension

Item of analysis	Group	N	M	SD	t	p (Two-tailed)
Pre-test	Experimental group	17	19.47	8.163	.785	.438
	Control group	22	17.36	8.432		

4.2 Analysis of differences in English reading comprehension performance and reading anxiety between both groups

4.2.1 Analysis of differences in English reading comprehension performance between both groups

Based on the pre-test and post-test of English reading comprehension, the paired samples t-test was used to analyze the differences of English reading comprehension in the experimental group. As shown in Table 4.4, there was significant difference of English comprehension performance in the experimental group (t=-11.298, p=.000 <.05). In other words, the English reading comprehension performance of learners in the experimental group was significantly promoted after they shared the SOAR

method note with their peers.

Table 4. 4 Paired samples t-test of reading comprehension performance in the experimental group

Group	Item of analysis	N	M	SD	t	df.	p (Two-tailed)
Experimental group	Pre-test	17	19.47	8.163	-11.298	16	.000
	Post-test	17	71.00	17.263			

As shown in Table 4.5, there was significant difference of English comprehension performance in the control group (t=-8.799, p=.000<.05). In other words, the English reading comprehension performance of learners in the control group was significantly promoted after they finished the SOAR method note without sharing with their peers.

Table 4. 5 Paired samples t-test of reading comprehension performance in the control group

Group	Item of analysis	N	M	SD	t	df.	p (Two-tailed)
Control group	Pre-test	22	17.36	8.432	-8.799	21	.000
	Post-test	22	47.41	17.639			

In order to analyze the differences in English reading comprehension performance between experimental group and control group, one-way ANCOVA was used by using learners' pre-test scores of the English reading comprehension test as the covariate. Before performing the analysis of one-way ANCOVA, the test of the homogeneity of regression coefficients and the homogeneity of the variance within groups were examined. The result did not violate the homogeneity of regression

coefficients (F=1.165, p=.288>.05). Also, variance within groups was homogeneous (F=.000, p=.988>.05), so one-way ANCOVA can be proceeded. As shown in Table 4.6, the average post-test score of learners in the experimental group (M=71.00) is higher than that in the control group (M=47.41), and there was significant difference between the experimental and control groups in reading comprehension (F=16.496, p=.000<.05) under excluding the covariate.

Table 4. 6 Analysis of difference in English reading comprehension performance between the experimental group and control group

	Group					
	Experimental group (N=17)		Control group (N=22)		F	p
	M	SD	M	SD		
Pre-test	19.47	8.163	17.36	8.432		
					16.496	.000
Post-test [a]	70.39 [a]	17.263	47.87 [a]	17.369		

Note. Post-test [a] = modified average; pretest as covariate = 18.28.

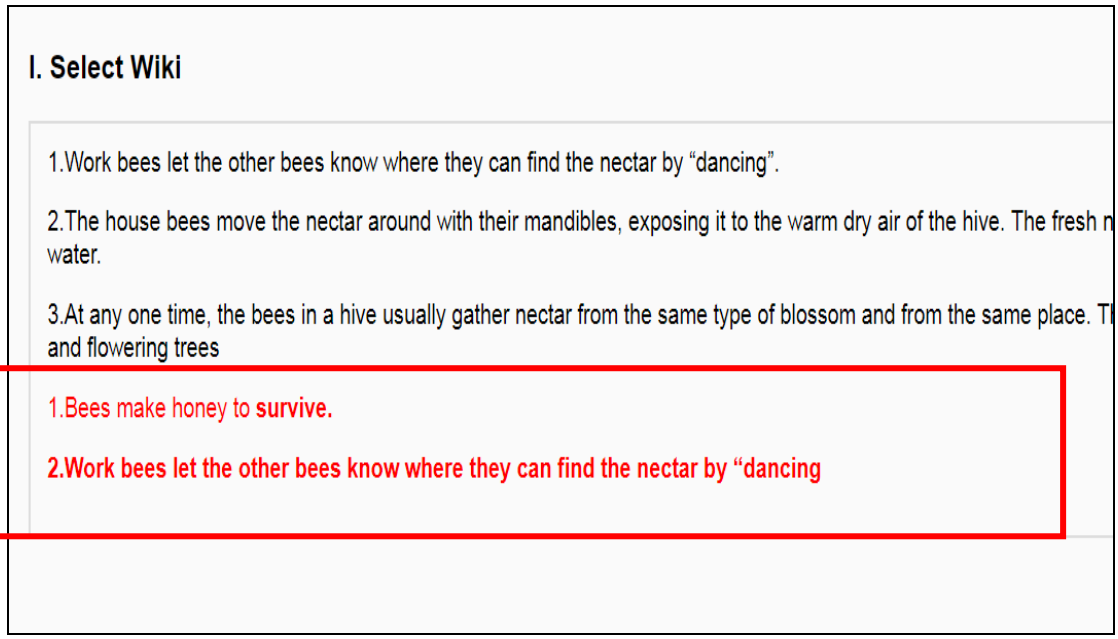

Fig 3. 13 The experimental group student's note taking of reading material *Bees* in the stage of "Select"

To understand why the note sharing can provide benefits in promoting reading comprehension performance, this study selected an example of the "Select" stage shown in Figure 3.13. In this case, one student with low prior knowledge in the experimental group read peers' notes, then copied and pasted some contents from peers to his note as well as reorganized and revised them during the note sharing time (see the text which is circled). The note sharing process helped this student catch more main points and he got 86 in the post-test of English reading comprehension.

4.2.2 Analysis of difference in English Reading anxiety between both groups

Based on the Foreign Language Reading Anxiety Scale (Saito et al., 1999), the independent samples t-test was used to analyze the difference of English reading anxiety in the experimental and control groups. As shown in Table 4.7, there was no

significant difference in English reading anxiety between the experimental group who shared SOAR study note with their peers and the control group without sharing notes with their peers (t =-1.781, p =.083<.05).

Table 4. 7 Analysis of difference in English reading anxiety between experimental group and control group

	Group						
	Experimental group (N=17)		Control group (N=22)				
Anxiety	M	SD	M	SD	t	df	p
Total	2.88	.476	3.22	.662	-1.781	37	.083
AA	2.82	.713	3.17	.906	-1.283	37	.208
AB	2.89	.457	2.77	.428	.851	37	.400
AC	2.79	.730	2.97	.587	-.869	37	.391

Note. AA = grammar and vocabulary anxiety; AB = reading confidence anxiety; AC = cultural gap anxiety

4.3 Analysis of differences in English reading comprehension performance and reading anxiety between the learners with field dependent and field independent cognitive styles in both groups

4.3.1 Analysis of difference in English reading comprehension performance between the learners with field dependent and field independent cognitive styles in both groups

In the present study, the paired samples t-test of reading comprehension pre-test

and post-test was used to analyze the differences in English reading comprehension performance between field dependent and field independent learners of both groups. As shown in Table 4.8, there was significant difference between pre-test and post-test for FD and FI learners in the experimental group who shared SOAR study note with their peers (t = -10.299, p =.000<.05; t=-7.119, p=.000<.05). That is, sharing SOAR study note is beneficial to both FD and FI learners in English reading comprehension.

Table 4. 8 Analysis of differences in English reading comprehension performance of FD and FI learners in the experimental group

Experimental group		M	SD	t	df	p
FD	Pre-test	17.13	7.453	-10.299	7	.000
	Post-test	65.50	21.173			
FI	Pre-test	21.56	8.618	-6.116	8	.000
	Post-test	75.89	12.108			

As shown in Table 4.9, FD (t = -7.647, p = .000<.05) and FI (t = -4.588, p = .002 <.05) learners in the control group who did not share SOAR study note with their peers both had significantly improvement on English reading comprehension performance.

Table 4. 9 Analysis of differences in English reading comprehension performance of FD and FI learners in the control group

Control group	M	SD	t	df	p

FD	Pre-test	17.92	8.930	-7.647	12	.000
	Post-test	49.85	18.133			
FI	Pre-test	16.56	8.110	-4.588	8	.002
	Post-test	43.89	16.586			

In order to analyze the differences in English reading comprehension performance between FD and FI learners of both groups, one-way ANCOVA was used by using learners' pre-test scores of the English reading comprehension test as the covariate. Before the analysis of one-way ANCOVA, the test of the homogeneity of regression coefficients and the homogeneity of the variance within FD and FI learners were examined. The result did not violate the homogeneity of regression coefficients (F=.995, p=.333>.05; F=.153, p=.701>.05) and variance within FD and FI learners was homogeneous (F=.702, p=.413>.05; F=.750, p=.399>.05), so one-way ANCOVA was proceeded. The result was shown in Table 4.10.

Analytical results show that the post-test scores of FD learners in the experimental group (M=65.905) are higher than those FD learners in the control group (M=49.597), and the ANCOVA results showed no significant difference (F =3.828, p =.066>.05) between these two groups. Therefore, sharing study note has no effects on FD learners. However, the post-test scores of FI learners in the experimental group (M=75.962) are higher than those FI learners in the control group

(M=43.816), and the ANCOVA results showed significant difference (F=18.795, p=.001>.05) between these two groups. Therefore, for FI learners, there were significant benefits in promoting reading comprehension performance when sharing SOAR study note was applied.

Table 4. 10 Analysis of difference in English reading comprehension performance between FD/FI learners in the experimental group and FD/FI in the control group

	Group					
	Experimental group		Control group			
	M	SD	M	SD	F	p
FD	(N=8)		(N=13)			
Pre-test	17.13	7.453	17.92	8.930		
Post-test [a]	65.905 [a]	6.555	49.597 [a]	5.141	3.828	.066
FI	(N=9)		(N=9)			
Pre-test	21.56	8.618	16.56	8.110		
Post-test [b]	75.962 [b]	5.122	43.816 [b]	5.122	18.795	.001

Note. Post-test [a] = modified average; pretest as covariate = 18.60

Post-test [b] = modified average; pretest as covariate = 16.04

4.3.2 Analysis of difference in English reading anxiety between the field dependent and field independent learners of both groups

Based on the Foreign Language Reading Anxiety Scale (Saito et al., 1999), the independent samples t-test was used to analyze the differences of English reading

anxiety between the field dependent and field independent learners of both groups. As shown in Table 4.11, there was significant difference of English reading anxiety (Total) between the FI learners of both groups (t=-2.863, p=.011<.05) and also there was significant difference of grammar and vocabulary anxiety (AA) between the FI learners of both groups (t=-2.574, p=.020<.05). The average score of English reading anxiety (M=2.75) and grammar and vocabulary anxiety (2.64) in the experimental group was lower than that in the control group (M=3.45; 3.56). However, there was no significant difference of English reading anxiety (Total) between the FD learners of both groups (t=-.113, p=.911>.05).

Table 4. 11 Analysis of difference in English reading Anxiety between FD and FI learners of both groups

	Group						
	Experimental group		Control group				
Anxiety	M	SD	M	SD	t	df	p
FD	(N=8)		(N=13)				
Total	3.03	.403	3.06	.729	-.113	19	.911
AA	3.03	.676	2.90	.911	.368	19	.717
AB	2.98	.269	2.69	.480	1.802	18.927	.008
AC	3.00	.654	2.96	.557	.144	19	.887
FI	(N=9)		(N=9)				

Total	2.75	.519	3.45	.517	-2.863	16	.011
AA	2.64	.733	3.56	.785	-2.574	16	.020
AB	2.81	.581	2.88	.333	-.348	16	.732
AC	2.61	.781	3.00	.661	-1.139	16	.271

Note. AA = grammar and vocabulary anxiety; AB = reading confidence anxiety; AC = cultural gap anxiety

4.4 Analysis of significant differences in English reading comprehension performance and reading anxiety between the high prior knowledge and the low prior knowledge groups of both groups

4.4.1 Analysis of difference in English Reading comprehension between the high prior knowledge and the low prior knowledge learners of both groups

In the present study, the paired samples t-test of reading comprehension pre-test and post-test was used to analyze whether the significant differences in English reading comprehension performance existed between the high prior knowledge and the low prior knowledge learners of both groups. As shown in Table 4.12, there were significant differences between pre-test and post-test for low and high prior knowledge learners in the experimental group who shared SOAR study note with their peers (t=-15.663, p=.000<.05; t=-4.678, p=.003<.05).

Table 4. 12 Analysis of difference in English reading comprehension performance of high and low prior knowledge learners in the experimental group

Experimental group	M	SD	t	df	p

Low prior knowledge (N=10)	Pre-test	13.60	3.438			
	Post-test	71.40	11.811	-15.663	9	.000
High prior knowledge (N=7)	Pre-test	27.86	4.525			
	Post-test	70.43	24.131	-4.678	6	.003

At the same time, the paired samples t-test of reading comprehension pre-test and post-test was used to analyze whether the differences in English reading comprehension performance existed between the high prior knowledge and the low prior knowledge learners in the control group who did not share SOAR study note with their peers. As shown in Table 4.13, there were significant differences between pre-test and post-test for low and high prior knowledge learners in the control group who did not share SOAR study note with their peers (t=-5.973, p=.000<.05; t=-6.240, p=.000<.05). In addition, the post-test average scores of low (M=41.64) and high (M=53.18) prior knowledge learners in the control group are higher than the pre-test average scores.

Table 4. 13 Analysis of difference in English reading comprehension performance of high and low prior knowledge learners in the control group

Control group		M	SD	t	df	p
Low prior	Pre-test	10.45	4.435	-5.973	10	.000

knowledge (N=11)	Post-test	41.64	16.250			
High prior knowledge (N=11)	Pre-test	24.27	4.962			
	Post-test	53.18	17.209	-6.240	10	.000

In order to analyze the differences in English reading comprehension performance between high prior knowledge and low prior knowledge learners of both groups who shared and did not share SOAR study note with their peers, one-way ANCOVA was used by using learners' pre-test scores of the English reading comprehension test as the covariate. Before the analysis of one-way ANCOVA, the test of the homogeneity of regression coefficients and the homogeneity of the variance within groups were examined. The analytical results of low prior knowledge learners (F=.384, p=.544>.05) and high prior knowledge learners (F=.269, p=.612>.05) did not violate the homogeneity of regression coefficients. Also, variance within low prior knowledge learners (F=.355, p=.559>.05) and high prior knowledge learners (F=1.810, p=.197>.05) was homogeneous, so one-way ANCOVA could be proceeded. The result was shown in Table 4.14.

The ANCOVA results showed that there was significant difference (F=18.297, p=.000<.05) between the low prior knowledge learners in the experimental group and

the low prior knowledge learners in the control group. The post-test scores of low prior knowledge learners in the experimental group (M=71.425) who shared the SOAR note with their peers are higher than those low prior knowledge learners in the control group (M=41.614) without sharing notes, but the ANCOVA results showed no significant differences (F=1.496, p=.240>.05) between the high prior knowledge learners in the experimental group and high prior knowledge learners in the control group.

Table 4. 14 Analysis of differences in English reading comprehension performance between low/high prior knowledge learners in the experimental group and low/high prior knowledge learners in the control group

	Group					
	Experimental group		Control group			
	M	SD	M	SD	F	p
Low prior knowledge	(N=10)		(N=11)			
Pre-test	13.60	3.438	10.45	4.435		
Post-test [a]	71.425 [a]	4.865	41.614 [a]	4.622	18.297	.000
High prior knowledge	(N=7)		(N=11)			
Pre-test	27.86	4.525	24.27	4.962	1.496	.240

Post-test [b]	67.503 [b]	7.761	55.044 [b]	6.097

Post-test [a] = modified average; pretest as covariate = 11.95
Post-test [b] = modified average; pretest as covariate = 25.67

4.4.2 Analysis of difference in English Reading anxiety between the high prior knowledge and the low prior knowledge learners of both groups

Based on the Foreign Language Reading Anxiety Scale (Saito et al., 1999), the independent samples t-test was used to analyze the differences of English reading anxiety between the high prior knowledge and the low prior knowledge learners of both groups. As shown in Table 4.15, there were no significant differences in English reading anxiety between the low prior knowledge learners of both groups (t=-1.593, p=.128>.05). Same to the low prior knowledge learners, there were no significant differences in English reading anxiety between the high prior knowledge learners of both (t=-1.021, p=.322>.05).

Table 4. 15 Analysis of difference in English reading anxiety between the high prior knowledge learners and the low prior knowledge learners of both groups

	Group						
	Experimental group		Control group				
Anxiety	M	SD	M	SD	T	df	p
Low	(N=10)		(N=11)				
Total	2.94	.411	3.30	.596	-1.593	19	.128
AA	2.84	.613	3.13	.848	-.909	19	.375

AB	2.99	.490	2.72	.467	1.257	19	.224
AC	2.85	.818	3.04	.723	-.581	19	.568
High	(N=7)		(N=11)				
Total	2.81	.584	3.15	.744	-1.021	16	.322
AA	2.81	.891	3.20	1.00	-.849	16	.408
AB	2.75	.399	2.81	.404	-.314	16	.785
AC	2.71	.636	2.90	.436	-.774	16	.450

Note. AA = grammar and vocabulary anxiety; AB = reading confidence anxiety; AC = cultural gap anxiety

4.5 Interview data analysis

In order to investigate the effects of making SOAR study note and sharing SOAR note with the peers to English reading comprehension and English reading anxiety, 22 students of the control group and 17 students of experimental group were interviewed by the researcher. The students of the control group were numbered as CS1 to CS22 and the students of the control group were numbered as ES1 to ES17.

4.5.1 The effects of making SOAR method study note and sharing note on English reading comprehension

According to question 1, 11 students answered that the step “Select” was the most difficult of all because they could not understand the reading text or find the main ideas. The interview results are listed as follows:

CS15: I don’t know where the key points are in the article.

CS12, ES3: I can't completely understand the article.

CS21: I can't find the main ideas.

CS9, ES2: I have to read the text many times to get the main idea.

ES17:It's not easy to get the key points because of the long reading text.

ES10:I am not sure if I find the real main idea.

CS3,ES9: I can't understand the reading text, so I can't catch the main points.

ES13: It's hard to find the main points.

Besides, 10 students answered that the step "Organize" was the most difficult of all because it was difficult to categorize the main ideas.

CS6, CS17, CS19: I don't know how to organize the main ideas.

CS18: It's hard to organize the main ideas and make them become something you can understand. It's very complicated.

CS13, ES4, ES5: It's difficult to organize the main ideas.

ES14, ES15: I don't know the main ideas belong to what category.

ES7: The main points are too scattered to classify.

In addition, 2 students answered that the step "Associate" was the most difficult of all because they could not think any examples that is connected to the reading text and 4 students answered that the step "Regulate" was the most difficult of all because

making questions are difficult.

CS4, CS22: Associate is the most difficult. It's hard for me to think of any examples or experience that is connected to the reading text, so I surf the Net.

CS2, CS16: Regulate is the most difficult because I don't know how to raise a question.

CS20: Regulate is the most difficult. I can't raise any questions if I don't understand and do well in the previous steps.

CS14: Regulate is the most difficult. It's not easy to make a question.

And still 2 students answered that every step is difficult and 10 students answered that SOAR was not difficult at all.

Moreover, according to question 3 about note sharing, 34 students agreed with the positive effects of note sharing, including 17 students who shared the note and 17 students who did not share the note with their peers in the experiment. Even though the students in the control group did not share the note, most of them thought that note sharing could help them in promoting reading comprehension. Their answers are listed as follows:

CS1: I think reading others' note can prevent me from forgetting the main points.

CS2: If I can read others' note, probably I can correct the errors I made.

CS4, CS14: I can consult others' ideas if I can read others' note.

CS5: I think sharing note is helpful because it can help me write something I missed from the reading text.

CS12: I can read others' main points to help me understand the reading text.

CS18, CS21: I can read others' note and connect it to my ideas, so I can understand the reading text better.

CS19: I can integrate others ideas to my note and see if I make any errors or mistakes. It's helpful to my reading.

CS20, CS9, CS7, CS13: If I can read others' note, I can catch more main points.

CS22: I can consult someone's note that is made by someone who has better English proficiency than me. In this way, I can comprehend the material more easily.

All of the students in the experimental group agreed that note sharing had positive effects on promoting English reading comprehension. Here follows the interview contents of the experimental group.

ES1: I got others' ideas when I read others' note. And it helped me understand the text more.

ES2: I found some interesting ideas from my peers to help me know more about the text.

ES3: Sharing note is beneficial to English reading comprehension because we exchanged our ideas.

ES4, ES9: Sharing note helped me find the main points.

ES5, ES14: I think sharing note is helpful because I copied others' ideas that I didn't write on the note.

ES6: I learned different points of view from the peers through the process of sharing note. And I think my English reading comprehension increased.

ES8: I was not clear about some part of the reading text, but I realized since I had read other's note.

ES17, ES11: I wrote more main points since I had read others' note.

ES10: Personally, I like to have discussion with the peers. Sharing the note is a form of silent discussion, so I like sharing note activity and it has effects on my English reading comprehension.

ES12: I copied others' ideas to help me comprehend the reading text.

ES8, ES13: Sharing note helped me fill the gap. And it is more efficient than doing the note all on my own.

ES15, ES16: Sharing the note helped me catch the points from others' note

and understand the reading text more.

To sum up, most students agreed that sharing note is beneficial to their English reading comprehension because they can write more main points, fill the gap and correct the errors or mistakes which lead them to comprehend the reading text more.

4.5.2 The effects of making SOAR method study note and sharing note on English reading anxiety

According to question 2, 17 students answered that making SOAR study note lowered their English reading anxiety, 6 students said making SOAR study note increased their reading anxiety, and 1 student had no comments to the effects of making SOAR note on reading anxiety and 15 students thought that making SOAR note had no effects on reducing reading anxiety.

The interview contents from the students who had positive attitude of making the SOAR study note on reducing English reading anxiety are listed as follows:

CS16: I felt relaxed when I was doing SOAR note.

CS9, CS17, CS20, CS22, ES8, ES9: Doing SOAR note made me relaxed because it helped me remembered more easily.

ES1: Doing SOAR note helped me feel better because it helped me catch the points.

ES10: Doing SOAR note made me focus on the main ideas of the reading

text. This way, it lowered my anxiety.

ES13: I think making SOAR study note was interesting although doing it took a lot of time.

However, 6 students had negative thoughts of making SOAR study note on English reading anxiety. The interview contents are listed as follows:

CS7: I wanted to give up making the SOAR study note because it was hard.

CS19: It was not easy for me to do the SOAR note. I felt uneasy.

CS14: I felt anxious when I was doing the SOAR note.

ES3: I felt anxious when I was doing the note of step "Select" but other steps I felt OK.

ES17: I am not good at taking note, so I felt anxious to do the SOAR note.

ES5: Making SOAR study note made me anxious.

Furthermore, based on the question 4, 17 students answered that sharing and reading SOAR study note lowered their English reading anxiety, 4 students said sharing SOAR study note increased their anxiety, 2 students had no comments to the effects of sharing SOAR note on reading anxiety and 16 students thought that sharing SOAR note had no effects on reducing reading anxiety.

A total of 9 students agreed that sharing note could lower their English reading anxiety, even though they were not allowed sharing note during the experiment. A

brief excerpt from the interview of the control group is as follows:

CS1, CS20: I think I feel less nervous if I can read others' note.

CS7: I think I will feel relaxed because sharing and reading others' note helps me comprehend the reading text easily.

CS12: When I see someone write the same points, I will feel easy.

CS18, ES6: I will feel more relaxed and have no pressure if I can read others' note.

CS21: I don't feel anxious at all.

CS14: I will feel less nervous because I can know more by consulting others' note.

CS13: I prefer sharing and reading the note with the peers to working on the note myself. I feel relaxed if I can do it.

A total of 8 students in the experimental group agreed that sharing note could lower their English reading anxiety. Here follows a brief excerpt from the interview:

ES2, ES3: I felt relaxed when I was reading others' note.

ES6, ES7: I felt relaxed and easy when I read others' note.

ES8: I felt less anxious when I read others' note which was made better than mine.

ES10, ES15, ES17: I felt easy when I read others' note.

However, 4 students had negative comments of sharing SOAR study note on English reading anxiety. The interview contents are listed as follows:

CS2: I feel afraid and nervous if I share the note.

CS6: I guess I will feel nervous when I read others note because I might not understand what they write.

CS19: I will feel nervous and uneasy because I have to do well on the note for others to read my note.

ES9: I felt anxious because I was afraid of the bad comments my peers' made.

In conclusion, nearly half of the students agreed that making SOAR study note lowered their English reading anxiety because they could catch and remember the main points easily, focus on the study and get joy from the task when they were making the SOAR note. This made them relax. And some students disagreed with the positive effects of making SOAR study note on their reading anxiety because doing SOAR study note was not easy for them and led them to be anxious. It should not be neglected that 1 student mentioned that only the step "Select" brought him anxiety because selecting main points was the hardest part of all the steps.

In addition, nearly half of the students agreed that sharing SOAR study note lowered their English reading anxiety. They expressed that sharing SOAR study note

could let them feel less nervous, and feel relaxed when they read others' ideas. They felt easy if they have the same idea with their peers. And one student thought that sharing SOAR study note decreased his anxiety because of his personal tendency to sharing. However, some students denied the positive effects of sharing SOAR study note on reducing their reading anxiety because they felt nervous and uneasy when they shared or thought of sharing SOAR study note. Caring the judgment from the peers and working on the note for sharing as best as they could all made them anxious.

4.6 Discussion

4.6.1 The result of note sharing effects in English reading comprehension between the learners in the experimental group and control group, field dependent and field independent learners, high and low prior knowledge learners

The analytical results of note sharing effects in English reading comprehension between the learners in the experimental group and control group, field dependent and field independent learners, high and low prior knowledge learners who shared and did not share the note are summarized in Table 4.16.

Table 4. 16 The analytical results of note sharing effects in English reading comprehension between the learners in the experimental group and control group, field dependent and field independent learners, high and low prior knowledge learners

Group		Post-test Average	Significant statistic

		scores	difference
All students	Comparison between both groups	Experiment > Control	★
	In the experimental group	Post-test>Pre-test	★
	In the control group	Post-test>Pre-test	★
Cognitive styles	Field dependency	Experiment > Control	N.S.
	Field independency	Experiment > Control	★
	In the experimental group	FI: Post-test>Pre-test FD: Post-test>Pre-test	★FI ★FD
	In the control group	FI: Post-test>Pre-test FD: Post-test>Pre-test	★FI ★FD
Prior knowledge	High	Experiment > Control	N.S.
	Low	Experiment > Control	★
	In the experimental group	High: Post-test>Pre-test Low: Post-test>Pre-test	★high ★low
	In the control group	High: Post-test>Pre-test Low: Post-test>Pre-test	★high ★low

★ : refers to significant difference **N.S:** refers to no significant difference

As a result of the study, there were significant differences in English reading comprehension performance between learners who shared and did not share their

SOAR note with their peers. The results echo the social constructivism that students would learn more to construct their knowledge than working alone through the process of sharing experiences or discussion (Vygotsky, 1978). The students who shared their SOAR note had better performance in English reading comprehension.

Also, based on the results of interview, all of the students who shared the note agreed that note sharing had positive effects on promoting English reading comprehension. The results are consistent with Faust and Paulson's study (1998), indicating that working in pairs to read others' notes can help poor note takers fill the gaps. Particularly, some of the students in the interview expressed that sharing notes can help them write something they missed from the reading text.

Furthermore, there was significant difference in English reading comprehension performance between field-independent (FI) learners who shared and did not share their SOAR note with their peers; however, there was no difference in English reading comprehension performance between field-dependent (FD) learners who shared and did not share the note. Generally speaking, field-dependent (FD) people are social-oriented (Witkin & Goodenough, 1977), and fond of having natural and face-to-face communication (Brown, 2000). In the present study, although FD learners were allowed to read others' notes, they had no chance to discuss with their peers even online or face to face. That is, they need to work independently to finish

the note. Without discussing with their peers, probably they could not organize the new text to their notes, thus reducing the effects of sharing note with their peers. In contrast, FI learners who are less social-oriented, having attention to details and good at organizing, they could integrate their peers' ideas to their own even without having any discussion.

As a result of the study, there was significant difference in English reading comprehension performance between the low prior knowledge group of learners who shared and did not share their note with their peers. Based on the previous study, high prior knowledge group of learners are proficient at connecting the new information to the background knowledge they have already had, and figuring out its reliability, whereas-learners with low prior knowledge are not good at finding out the main points when they do the online text reading (Lucassen et al., 2013). Therefore, low prior knowledge group of learners need to read others' note as a scaffolding, to help them catch the main ideas of the reading article, but high prior knowledge group of learners can still work well without any note sharing. According to the results of the interview, ten students with low prior knowledge who shared the note indicated that they comprehended the text more easily because they could get others' ideas, find the main points, and write something they missed from the text. In sum, sharing the note is beneficial for the learners who have low prior knowledge in English reading

comprehension.

4.6.2 The result of note sharing effects in English reading anxiety between the learners in the experimental group and control group, field dependent and field independent learners, high and low prior knowledge learners

The analytical results of note sharing effects in English reading anxiety between the learners in the experimental group and control group, field dependent and field independent learners, high and low prior knowledge learners who shared and did not share the note are summarized in Table 4.17.

Table 4. 17 The analytical results of note sharing effects in English reading anxiety between the learners in the experimental group and control group, field dependent and field independent learners, high and low prior knowledge learners who shared and did not share the note

Item	Group		Post-test Average scores	Significant statistic difference
Total	All students	Comparison between groups	Control> Experiment	N.S.
	Cognitive styles	Field dependency	Experiment> Control	N.S.
		Field independency	Control>Experiment	★
	Prior knowledge	High	Control> Experiment	N.S.
		Low	Control> Experiment	N.S.

grammar and vocabulary anxiety (AA)	All students	Comparison between groups	Control> Experiment	N.S.
	Cognitive styles	Field dependency	Experiment> Control	N.S.
		Field independency	Control> Experiment	★
	Prior knowledge	High	Control> Experiment	N.S.
		Low	Control> Experiment	N.S.
reading confidence anxiety (AB)	All students	Comparison between groups	Experiment> Control	N.S.
	Cognitive styles	Field dependency	Experiment> Control	N.S.
		Field independency	Control> Experiment	N.S.
	Prior knowledge	High	Experiment> Control	N.S.
		Low	Experiment> Control	N.S.
cultural gap anxiety (AC)	All students	Comparison between groups	Control> Experiment	N.S.
	Cognitive styles	Field dependency	Experiment> Control	N.S.
		Field independency	Control> Experiment	N.S.
	Prior knowledge	High	Control> Experiment	N.S.
		Low	Experiment> Control	N.S.

As a result of the study, FI learners who shared the note had lower anxiety than those without sharing any notes, especially in the facet of grammar and vocabulary anxiety. As a result of the interview, indeed, four FI students in the experimental

group indicated that they felt relaxed and less nervous when they shared and read their peer's note.

However, there were no significant differences between the learners who shared and did not share the SOAR study note with their peers in English reading anxiety or the high prior knowledge group and low prior knowledge group of learners who shared and did not share the SOAR study note with their peers in English reading anxiety. In conclusion, for FI learners, sharing the note with the peers could help them decrease English reading anxiety.

Chapter 5. Conclusions and future works

5.1 Conclusion of the study

This work examined the effects of sharing or not sharing SOAR method note on English reading comprehension and English reading anxiety. Analytical results show that sharing SOAR method note contributed to promote English reading comprehension in comparison with not sharing SOAR method note. Particularly, this study found that English reading comprehension of field-independent learners can be significantly promoted through the process of SOAR method note sharing, but field-dependent learners have not been found.

Moreover, English reading comprehension of learners with low knowledge can be significantly promoted by means of sharing the SOAR method note, but learners with high knowledge have not been found. In addition, for the field independent learners, English reading anxiety can be significantly decreased due to the process of sharing SOAR method note, especially, but not for the field dependent learners.

This study confirmed that sharing learners' SOAR method notes with their peers is a good way to promote learners' English reading comprehension performance, particularly for learners with field-independent cognitive style and low knowledge level, as well as to lower field-independent learners' English reading anxiety. The

results can help English teachers plan an effectively personalized instruction while using SOAR method note to support English reading activities.

5.2 Limitations and future work

Although analytical results show that sharing SOAR method note had positive effects on English reading comprehension and English reading anxiety, this study has still several limitations. One limitation is small sample size of research subjects. This may affect the reliability of research results. Future research could increase the numbers of research subjects in order to increase the reliability of the experiment.

Another limitation is the sharing process of SOAR method note. The present study utilized SOAR method study note and made the students share the note with their peers in every step. The continuous making and sharing note seemed like a dull work for some of the students. Therefore, investigating when and how to share the note for preventing the learners from losing patience should be considered in the future research.

The changing process of learners' English reading anxiety was still another limitation in the present study. Without the pre-test of English reading anxiety, anxiety transferring process of individuals could not be investigated. Therefore, how the learners' reading anxiety increased or decreased through the note-sharing process could be probed into by application of both pre- and post- test of English reading anxiety.

The time for experiment is an additional limitation. 2-day experiment seemed too short in the present study. The future research can extend the 2-day experiment into a semester or even longer to investigate the effects of sharing SOAR method note in English reading comprehension and anxiety. To do so, the analytical results can be more valuable and reliable.

The final limitation is that the present study did not investigate how the learners created their note through the process of note sharing but only focused on collecting and analyzing the note data. If sharing SOAR method note is an effective learning strategy (Faust & Paulson, 1998; Landay, 1999), why did some learners still get low grades on the post-test? What did they do during the note sharing time? Didn't they copy others' note or didn't they remember what they wrote? Obviously, investigating what the learners write during the note sharing to determine the effectiveness of note sharing should be considered in the future research.

5.3 Instructional implications

Because of the benefits of sharing SOAR method note in English reading comprehension performance, the present study has some suggestions for English teachers. First, since SOAR method is an effective learning strategy to English reading comprehension, English teachers should provide materials which could arouse the students' interest and train them to make SOAR method note more proficiently.

Then, face to face discussion could be designed in the sharing note activity especially. Students could talk about what they write on the note. In this way, field dependent students could be encouraged by discussing with their peers when they read others' notes in order to promote their English reading comprehension.

Also, English teachers could divide the class into small heterogeneous groups and design group competition in advance before starting SOAR method note. Because some of the low English level students in the experiment would be lack of motivation in making and reading their peer's note, they should be recruited in a small group which contains high English proficient students. In this way, they were pushed to take making and sharing SOAR method note more seriously in order to gain good grades for the group. And also for the teachers, small heterogeneous groups could make sharing note activity go more efficiently and orderly in the classroom.

In the interview, some students indicated that their reading anxiety might come from the sharing note activity. Therefore, to prevent the increase of English reading anxiety which possibly comes from the process of sharing, anonymous note writing online could be a choice in the note sharing activity design. That is, before starting doing the note, students could create a new name to have a new identity instead of using the school numbers.

In conclusion, SOAR note sharing is an effective and efficient reading strategy

for EFL students, but as English teachers, to promote their English reading performance and decrease reading anxiety, they should take their students' learning styles and their prior knowledge levels into account before designing English reading activity with SOAR note sharing.

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Appendix A. Group Embedded Figure Test (GEFT)

班級：_____ 座號：_____ 姓名：_____ 性別：_____ 年齡：_____

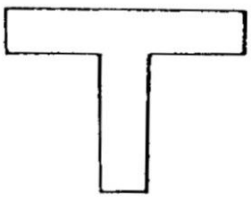
團體嵌圖測驗(吳裕益修訂)

姓名：_____ 座號：_____ 性別：_____

簡 單 圖 形

(一)

(二)



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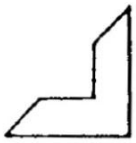

(四)

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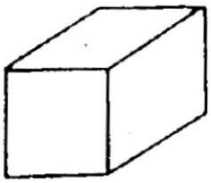

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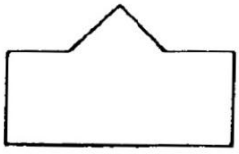

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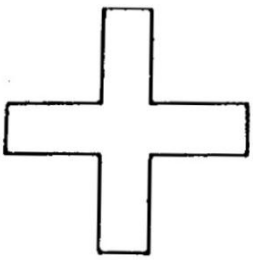
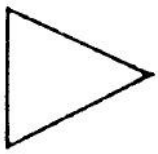


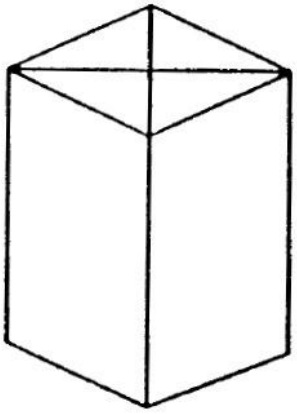
本測驗是在測量你從複雜圖形中，找出隱藏在其內的簡單圖形之能力。

下面是一個簡單圖形，我們稱它為「甲」：



甲

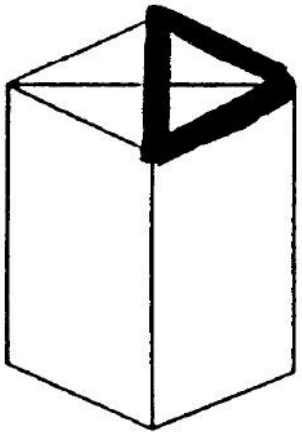
「甲」這個簡單圖形，隱藏在下面這個複雜圖形之內：



請在複雜圖形之內，找出「甲」這個簡單圖形，並用鉛筆把它描出來。要注意到複雜圖形內所隱藏的簡單圖形，必須與他單獨出現時的大小、比例和方向完全相同。

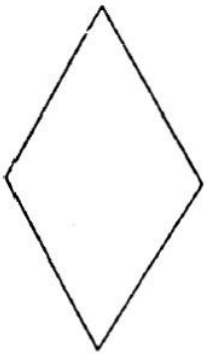
上圖所描出的圖形即為正確的答案。

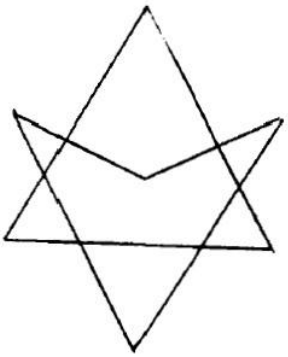
要注意到右邊頂端的那個三角形才是正確的答案。雖然左邊在大小和比例上完全一樣，不過它的方向剛好相反，所以不是正確的答案。



現在讓我們來做另一個練習題。請從下面那個複雜圖形中，找出「乙」這個簡單圖形束，並用鉛筆把它描出來。

乙





答案：

從下頁開始，有很多像前面所做過的問題。每一題有一個複雜圖形，以及所要找出的簡單圖形的數字代號。作答時可以翻到前面去看每一題所要找出的是那種簡單圖形。注意以下各點：

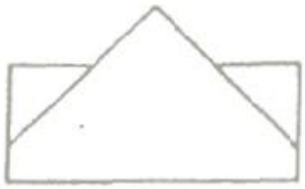
1. 只要你覺得需要，隨時都可以翻到封面的地方去查看簡單圖形。
2. 如果描錯，請用橡皮擦拭乾淨。
3. 依照題號的順序作答，除非你實在不會作答，否則不要跳過任何一題。
4. 每一題只描出一個簡單圖形，有的問題你可能可以找出兩個以上的答案，但只要描出一個就可以。
5. 複雜圖形內所隱藏的簡單圖形，在大小、比例和方向上均與封面的簡單圖形完全一樣。
6. 第一部分作答的時間是 2 分鐘。

現在開始作答第一部分。

第一部分(作答時間 2 分鐘)

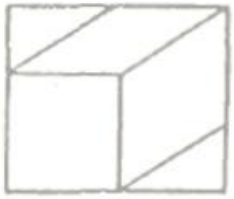
1. 找出簡單圖形(二)

2. 找出簡單圖形(七)



3. 找出簡單圖形(四)

4. 找出簡單圖形(五)



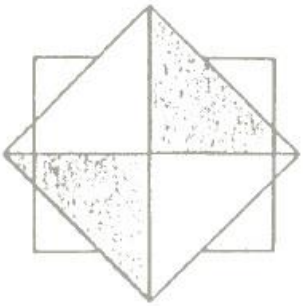
5. 找出簡單圖形(三)

6. 找出簡單圖形(六)

7. 找出簡單圖形(一)

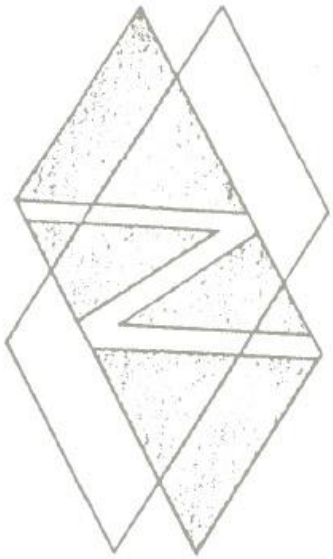
第二部分(作答時間 5 分鐘)

1



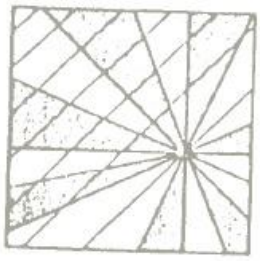
1. 找出簡單圖形(七)

2



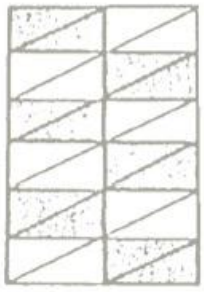
2. 找出簡單圖形(一)

3



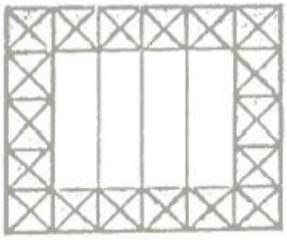
3. 找出簡單圖形(七)

4



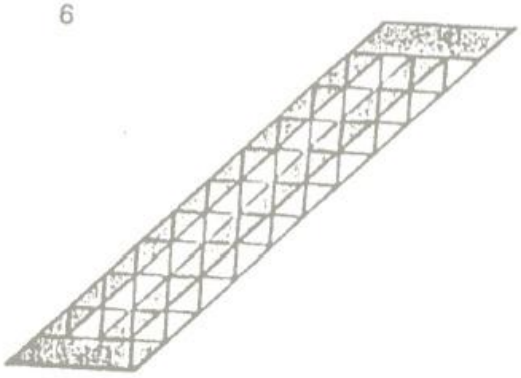
4. 找出簡單圖形(五)

5



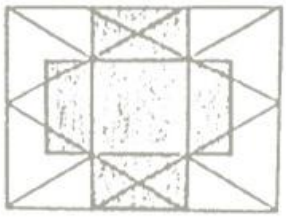
5. 找出簡單圖形(二)

6



6. 找出簡單圖形(三)

7



7. 找出簡單圖形(五)

8

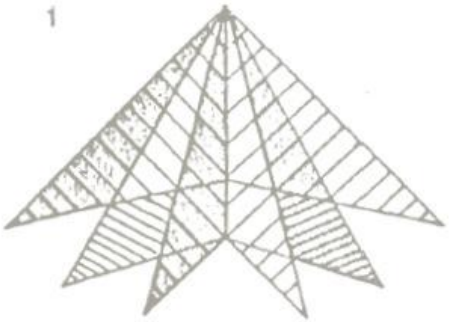
8. 找出簡單圖形(四)

9

9. 找出簡單圖形(八)

第三部分(作答時間 5 分鐘)

1



1. 找出簡單圖形(六)

2

2. 找出簡單圖形(七)

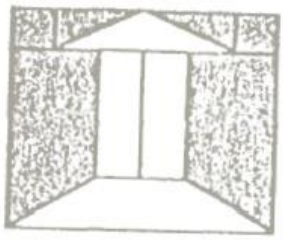
3

3. 找出簡單圖形(三)

4

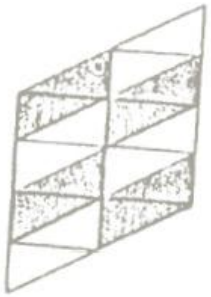
4. 找出簡單圖形(五)

5



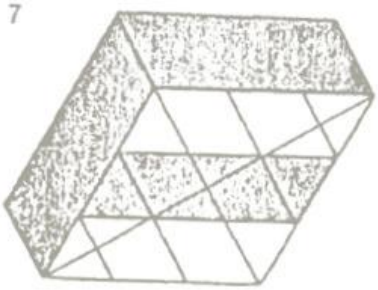
5. 找出簡單圖形(二)

6



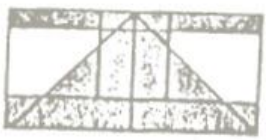
6. 找出簡單圖形(五)

7



7. 找出簡單圖形(一)

8



8. 找出簡單圖形(三)

9

9. 找出簡單圖形(一)

Appendix B. Foreign Language Reading Anxiety Scale (FLRAS)

英語閱讀焦慮量表

說明：請同學仔細閱讀每一條敘述，並且依直覺反應，請你勾選合適的選項。
舉例：

	問卷內容	非常同意	同意	同意與不同意程度相當	不同意	非常不同意
1	我喜歡英文課					

※以下題目，請開始作答，共 20 題。

	問卷內容	非常同意	同意	同意與不同意程度相當	不同意	非常不同意
1	在英語閱讀中，當不確定是否讀懂的時候，我感到沮喪。					
2	在閱讀英文時，我常常懂得單字的意思，但還是不太了解作者在說甚麼。					
3	在閱讀英文時，我感到很困惑，以至於記不得在讀甚麼。					
4	不管甚麼時候，我一看到整頁的英文就會害怕。					
5	當閱讀不熟悉的英文題材時，我覺得緊張。					
6	在英文閱讀中，每當遇到不懂的英文文法時，我就感到心煩。					
7	在英文閱讀中，當我無法理解所有的單字，我就會緊張和困惑。					
8	在英文閱讀中，每當我遇到不會念的單字時，我會感到焦慮。					

	問卷內容	非常同意	同意	同意與不同意程度相當	不同意	非常不同意
9	在英文閱讀中，我通常會逐字的翻譯。					
10	在我讀過那些陌生的英文字母和符號時我很難記得讀過甚麼。					
11	為了閱讀英文，必須學習新的單字，為此我感到憂慮。					
12	我很享受英文閱讀。					
13	當我閱讀英文我感到很有自信。					
14	一旦我習慣了英文閱讀，閱讀英文不再是難事。					
15	學習英文最困難的部分是學習英文閱讀。					
16	我很樂意學『說』英文，而不是學習『閱讀』英文。					
17	我不在意自己默讀，但是當我要讀出來我覺得很難受。					
18	我很滿意我目前已達到的英語閱讀能力。					
19	英美的思想和文化對我而言是很陌生的。					
20	為了閱讀英文，我必須要知道很多英美相關的歷史及文化。					

Appendix C. Reading Comprehension Test (Pre- and post- test)

(A) Reading Comprehension Pretest

Class 班級:
Name 姓名:
Seat Number 座號:
Age 年齡:

Reading Comprehension Test 1

I. Multiple Choice (選擇題)

1. If there are 60,000 bees in a hive, how many of them will work as work bees?
(A) 40,000
(B) 30,000
(C) 20,000
(D) 10,000

2. What is "not" work bees' work?
(A) Find a source of nectar.
(B) Make honey in a hive.
(C) Gather nectar.
(D) Tell other bees where the nectar is.

3. According to figure 8 dance, the middle part of figure 8 points straight to the right of the sun, it means
(A) The nectar is straight to the sun.
(B) The nectar is on the left side of the sun.
(C) The bees can find the food to the right of the sun.
(D) The bees can find the food straight to the sun.

4. If the bees shake their bodies for a long time, it means
(A) The food is a long way away.
(B) The food is not far away from the hive.
(C) The bees are looking for the food.
(D) The bees are showing themselves.

5. How do the bees move the nectar?
(A) By waving their wings.

(B) By shaking their bodies.
(C) By using their mandibles.
(D) By dancing in a shape of figure 8.

6. What is the first step after the work bees go back to the hive?
(A) Expose the nectar to warm dry air.
(B) Give the nectar to the house bees.
(C) Put nectar in the cell.
(D) Take nectar out of the hive.

7. When you see a lot of bees flying up and down in the blossom, they are probably
(A) Collecting the flowers.
(B) Making honey.
(C) House bees.
(D) Work bees.

8. If you are a beekeeper (蜂農)and the nectar is gathered (採集) on October 14, when can you have honey?
(A) After twenty minutes.
(B) After one day.
(C) After two days.
(D) After three days.

9. If the food is on the right of the sun and it is not far from the hive, how can the bees fly?
(A) They shake their bodies for a short time and their middle part of figure 8 dance points to the right.
(B) They shake their bodies for a short time and their middle part of figure 8 dance points to the left.
(C) They shake their bodies for a long time and their middle part of figure 8 dance points to the left.
(D) They shake their bodies for a long time and their middle part of figure 8 dance points to the right.

10. When the bees go back to the hive and carry nectar, they give this to the house bees. What does this mean here?
(A) Honey
(B) Nectar

(C) Hive

(D) Flower

II. Short Answer Question (簡答題):

11. Compare (比較) house bee's and work bee's work.

House bee	Work bee

12. Where do the bees usually get nectar?

_____ _____ _____

13. What is the main difference (不同) between nectar and honey?

_____

14. Why do bees dance?

_____

15. How do house bees make honey?

(1) Choose the work the house bees do from the list below; (2) put the work in order.

(1) **請選出內勤蜂製作蜂蜜的步驟**；(2) **將這些步驟進行排序.** (6 points)

(A) After 3 days, cover the cells with lids.

(B) Go collect the nectar.

(C) Expose nectar to warm dry air.

(D) Put the nectar in a cell in the honeycomb.

(E) Dance in the shape of a figure "8".

(1) _____

(2) _____

(B) Reading Comprehension Postest

Class 班級:
Name 姓名:
Seat Number 座號:
Age 年齡:

Reading Comprehension Test 2

I. Multiple Choice (選擇題)

1. If you are a beekeeper (蜂農)and the nectar is gathered (採集) on October 14, when can you have honey?
(A) After three days.
(B) After two days.
(C) After one day.
(D) After twenty minutes.

2. What is "not" work bee's work?
(A) Find a source of nectar.
(B) Tell other bees where the nectar is.
(C) Gather nectar.
(D) Make honey in a hive.

3. How do the bees move the nectar?
(A) By waving their wings.
(B) By dancing in a shape of figure 8.
(C) By using their mandibles.
(D) By shaking their bodies.

4. If there are 30,000 bees in a hive, how many of them will work as work bees?
(A) 40,000
(B) 30,000
(C) 20,000
(D) 10,000

5. If the bees shake their bodies for a long time, it means
(A) The bees are looking for the food.
(B) The food is not far away from the hive.

(C) The food is a long way away.
(D) The bees are showing themselves.

6. When the bees go back to the hive and carry nectar, they give this to the house bees. What does this mean here?
(A) Honey
(B) Nectar
(C) Hive
(D) Flower

7. According to figure 8 dance, the middle part of figure 8 points straight to the right of the sun, it means
(C) The bees can find the food to the right of the sun.
(D) The nectar is on the left side of the sun.
(C) The nectar is straight to the sun.
(D) The bees can find the food straight to the sun.

8. If (如果)the food is on the right of the sun and it is not far from the hive, how can the bees fly?
(A) They shake their bodies for a long time and their middle part of figure 8 dance points to the left.
(B) They shake their bodies for a short time and their middle part of figure 8 dance points to the left.
(C) They shake their bodies for a short time and their middle part of figure 8 dance points to the right.
(D) They shake their bodies for a long time and their middle part of figure 8 dance points to the right.

9. When you see a lot of bees flying up and down in the blossom, they are probably
(A) Collecting the flowers.
(B) Work bees.
(C) House bees.
(D) Making honey.

10. What is the first step after the work bees go back to the hive?
(A) Expose the nectar to warm dry air.
(B) Put nectar in the cell.
(C) Give the nectar to the house bees.

(D) Take nectar out of the hive.

II. Short Answer Question (簡答題):

11. Why(為甚麼) do the bees dance?

_____

12. Where can the bees get nectar?

_____ _____ _____

13. How do house bees make honey?

(1) Choose the work the house bees do from the list below; (2) put the work in order.

(1) **請選出內勤蜂製作蜂蜜的步驟**；(2) **將這些步驟進行排序.** (6 points)

(A) After 3 days, cover the cells with lids.

(B) Go collect the nectar.

(C) Expose nectar to warm dry air.

(D) Put the nectar in a cell in the honeycomb.

(E) Dance in the shape of a figure “8”.

(1) _____

(2) _____

14. What is the main (主要的)difference (不同) between nectar and honey?

_____

15. Compare (比較) house bee’s and work bee’s work.

House bee	Work bee

Appendix D. Reading material

(A) TABLE MANNERS (For practice)

Conversation A

(in the studio)

Rob: Welcome Maria Manners!

Maria: Thank you, Rob.

Rob: Many of us eat a nice meal on Thanksgiving. Who do you eat with?

Maria: I eat with my family and friends.

Rob: You know a lot about table **manners.** Can you share some tips with us?

Maria: Sure. First, always be **polite**.

Rob: Say, “please” and ”thank you”?

Maria: That’s right.

Rob: How else can we be polite at the dinner table?

Maria: People often pray before the Thanksgiving meal. So wait before you eat.

Rob: And what else?

Maria: Put the napkin on your lap. And remember “don’t **reach** across the table.” Ask somebody for help **pass** something you need.

Rob: That’s good advice. My mom also has good **advice**. Don’t talk with food in your mouth.

Maria: Your mom is right!

Rob: She’s always right.

Maria: Most moms are. Listen to your mother.

Conversation B

(in the jungle Cafe)

James: Hi, Susie. What are you doing?

Susie: Hi, I'm arranging the office's Thanksgiving dinner. It's tonight.

James: Do you need help?

Susie: Can you help me set the table?

James: Of course. Where are the plates?

Susie: They are right here.

James: OK. Does each place need a bowl?

Susie: Yes, please. Everyone **should** have a bowl.

James: Should I put the **silverware** by the plates

Susie: Yes. Each place needs a knife, a **fork** and a **spoon**.

James: Uh. Where do the forks go?

Susie: They go to the left of the plate. Picture the word "FORKS". The order, left to right, is: F for Fork, O for the Plate, I mean the shape, K for knives and S for Spoons. "R" doesn't make sense here but it helps you get the idea. By the way, the knife **blade** always faces the plate.

James: What about the **napkins**?

Susie: **Fold** them. Then put them next to the forks.

James: And the glasses?

Susie: Put one above each knife.

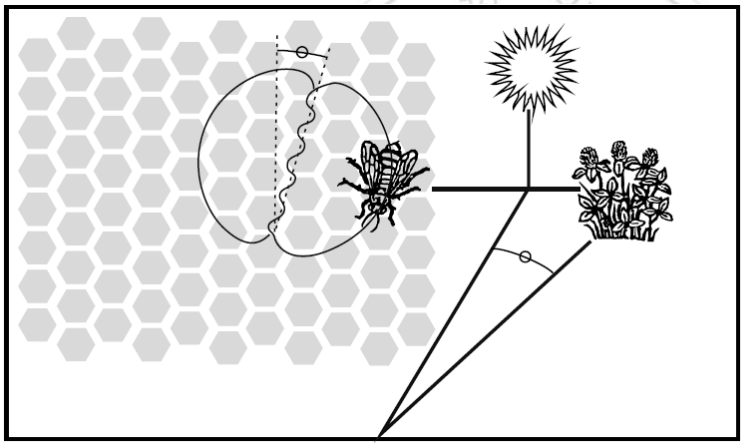
🕮 **manners** 禮儀；規矩　**polite** 有禮貌的　**reach** 伸手去拿　**pass** 傳；遞　**advice** 勸告　**should** 應該　**silverware** 銀製品　**fork** 叉子　**spoon** 湯匙　**blade** 刀片　**napkin** 餐巾　**fold** 摺疊

(B) Bees

COLLECTING NECTAR

Bees make honey to **survive**. If there are 60,000 bees in a hive, about one third of them will gather **nectar**. Then house bees make nectar into honey. A small number of bees work as work bees. They find a source of nectar, and go back to the hive to tell the other bees where it is.

Work bees let the other bees know where they can find the nectar by "dancing". The dance gives information about how far and how much time the bees need to fly. During this dance, the bee shakes her body while running in circles in the shape of a figure 8. Look at the picture 1. It shows the figure "8"dance.



(picture 1)

The picture shows a bee dancing inside the hive on the **vertical** face of the honeycomb. **If** the **middle** part of the figure "8" points **straight** up, it means that bees can find the food if they fly straight towards the sun. If the middle part of the figure "8" points to the right, the food is to the right of the sun. And if the food is quite near, the bee shakes her body for a short time. If the food is far away, she shakes her body for a long time.

MAKING HONEY

When the bees go back to the hive and carry nectar, they give this to the house bees. The

house bees move the nectar around with their **mandibles**, **exposing** it to the warm dry air of the hive. The fresh nectar has sugar and minerals with about 80% water. After 10 to 20 minutes, when much water **evaporate**, the house bees put the nectar in a **cell** in the **honeycomb.** After 3 days, the honey in the cells has about 20% water. At this stage, the bees **cover** the cells with lids**.** They make the lids out of **beeswax**.

At any one time, the bees in a hive usually gather nectar from the same type of **blossom** and from the same place. They usually gather nectar from fruit trees, clover and flowering trees.

🕮 **(v.) survive** 生存 **(n.) nectar** 花蜜 **(adj.) vertical** 垂直的
(conj.)If 如果 **(adj.) middle** 中間的 **(adj.) straight** 直的
(n.) mandible(s) 昆蟲的上顎 **(v.) expose** 使..暴露於
(v.) evaporate 使...蒸發 **(n.) cell** 蜂房的巢室 **(n.) honeycomb** 蜂巢
(v.) cover 覆蓋 **(n.) beeswax** 蜂蠟 **(n.) blossom** 果樹的花

(This article is adapted and revised from PISA Related items-reading, December, 2006)

Appendix E. SOAR method notes

(A) Table Manners (For practice)

I. Select (選擇): Write the complete main points.

Copy and paste the words or phrases in the bottom.
將本文敘述的重點複製貼上到下面空白處。

II. Organize (組織):

Organize the ideas you selected previously in the table.
將挑選出來的重點分類整理到表格中，可自行下標題。

III. Association (聯想):

Can you think of other table manners not mentioned in the reading text? And why do we have these table manners? Why do we set the plates and the silverware on the table like the way mentioned in the dialogue? Write them down in Chinese or English.
寫出你知道但文中未出現的餐桌禮儀。想想看為什麼要有這些餐桌禮儀? 為何餐具在桌面上擺放的位置是如此。本題可用中文或英文作答。

Example: We might knock over something on the table when we reach across the table.
例如：當我們伸手越過桌面拿東西，我們可能會把桌上的東西打翻。

IV. Regulation (調節): Self- test.

Raise some questions to test yourself if you completely understand the reading text. You can answer in Chinese or English.
透過自我提問，測驗自己是否了解全文內容。本題可用中文或英文作答。

Example: Where can I put the spoon when I set the table?
例如：當我布置餐具在桌面時，我要把湯匙放在哪裡?

(B) BEES

I. Select (選擇): Write the complete main points.

Copy and paste the words or phrases in the bottom.
將本文敘述的重點複製貼上到下面空白處。

II. Organize (組織):

Organize something you selected in the matrices and give them subtitles.
將挑選出來的重點分類整理到表格中，可自行下標題

III. Associate (聯想):

A. In the article *Bees*, work bees and house bees have different jobs, and they cooperate (合作) with each other to make honey. Can you think of other animals or human beings that they work together with their partners like bees? Please write them down. You can answer in Chinese or English.
在蜜蜂這篇文章中，工蜂和內勤蜂有不同的職責，然而他們彼此合作以製造蜂蜜。想想還有其他動物或人類活動有分工合作的行為嗎? 可用中文或英文回答。

動物/人類	分工合作行為
人	在足球比賽中，有當前鋒、中鋒，有人當守門員，為了贏得比賽。

B. The bees cannot speak a language, but they can communicate through figure 8 dancing or shaking their abdomens to tell bees where the food is. Can you think of some behaviors or signals that animals or human beings use to exchange the information or send a message? You can answer in Chinese or English.
蜜蜂無法使用語言，但是會透過飛行及搖擺身體表示食物的位置。想想看，

是否有其他動物或人類行為，不是透過語言，而是其他方式來傳遞訊息的？可用中文或英文回答。

動物/人類	**行為**	**意義**
人類	食指比在唇上	保持安靜

IV. Regulate (調整): Self- test.

Raise some questions about the reading “Bees” to test yourself if you completely understand the reading text. You can answer in Chinese or English.
根據文章中的內容，提出一些問題考自己，測驗自己是否了解全文內容。本題可用中文或英文作答。

Example: What is house bees’ work?
例如：內勤蜂的工作是甚麼?

Appendix F. The questions of the interview

訪談題目：

實驗組

1. 你撰寫 SOAR 筆記時有遇到什麼困難嗎？(哪一個步驟遇到比較多困難？)
2. 撰寫 SOAR 筆記時，是否影響你對於英語閱讀的感受？如何影響？為什麼？
3. 你對於分享筆記的看法是什麼？對於你理解文章有什麼樣的效果？為什麼？
4. 分享筆記是否影響你對於英語閱讀的感受？如何影響？為什麼？

控制組

1. 你撰寫 SOAR 筆記時有遇到什麼困難嗎？(哪一個步驟遇到比較多困難？)
2. 撰寫 SOAR 筆記時，是否影響你對於英語閱讀的感受？如何影響？為什麼？
3. 如果筆記可以分享，對於你理解文章有什麼樣的效果？為什麼？
4. 如果筆記可以分享，是否影響你對於英語閱讀的感受？如何影響？為什麼？