

# A Case Study on Academic Reading Strategy Awareness of Non-English Major Students in China

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## Abstract

This study investigates the reading strategies used by academically novice, non-English major students enrolled in a teacher education programme under the background of National Standard in an agricultural university. Data were obtained from personal feedback diaries and notebooks kept by the students as they undertook course reading after class. An analysis revealed that employed various reading strategies. However, there was limited evidence to suggest that students employed these strategies routinely. While students reported reflecting on their reading, they did not appear to amend unsuccessful strategy use, or re-use successful strategies. The study reveals the difficulties of students who lack experience of reading academic literature in English, and discusses pedagogical implications for feedback diaries and notebooks.

## Keywords

Academic Reading, Non-English Major Students, Reading Strategies, Feedback Diary, Notebook

## 1. Introduction

The Ministry of Education issued the “National Standards for Undergraduate Teaching Quality in Institutions of Higher Education” on January 30, 2018, which requires guiding students to have an international perspective and academic communication abilities. It is necessary to gather information on students’ reading abilities to ascertain students’ reading proficiency and support their enhancement of academic reading skills from the perspective of academic English curriculum design. Therefore, this study elaborates on how students engage with academic

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texts. Grabe (2008) describes those who read academic literature as “strategic”, as they automatically and routinely apply effective and appropriate combinations of strategies based on readers’ goals, reading tasks, and processing abilities. Furthermore, strategic students are aware of their effective understanding of reading goals and appropriately utilize a series of strategies to improve their comprehension of academic texts.

In terms of revealing students’ reading strategies, research tends to be categorized into several types: quantitative surveys of investigating reading habit trends, experimental studies, questionnaire surveys of examining reading strategies, and qualitative research interviews. According to Grabe (2008), findings from these methods indicate that students who perform well in reading adopt a range of strategies, categorized into top-down and bottom-up, mining and writing, and meta-cognitive and cognitive strategies. These studies have greatly expanded our understanding of reading strategies in different contexts. Nevertheless, it is important to consciously cultivate their academic reading skills and enable them to acquire academic knowledge in a self-study environment before students begin their specialized studies in university. However, events that occur outside the classroom and in “real-life situations” are rarely mentioned in EAP studies (Malcolm, 2009).

Therefore, the focus of this study is on how inexperienced students read academic literature when they begin their university education and professional studies. Recent international research on academic reading includes studies from Asia (Ohata & Fukao, 2014), Türkiye (Nergis, 2013), North Africa (Dhieb-Henia, 2003), Mokhtari & Reichard (2004), the Middle East (Malcolm, 2009), and the United States (Plakans, 2009). The focus of these reading studies is primarily on the use of parallel languages (instruction in the native language with supplementary course literature in English), rather than on the strategies that students use to complete academic reading.

## 2. Research Design

### 2.1. Research Questions

The present study aims to address the following two research questions:

- 1) What strategies do non-English major students use during their academic reading?
- 2) How do non-English major students complete academic English reading?

### 2.2. Participants

The participants in this study consist of 56 sophomore volunteers from two natural classes of the Agronomy major in an agricultural university in China. The College English Test Band 4 (CET-4) proficiency represents that the examinees have certain knowledge and abilities in English. Generally speaking, examinees with CET-4 proficiency have mastered approximately 4500 commonly used words and a certain number of phrases. This enables them to understand most of the words in common

contexts such as daily life, campus study, and general social topics, and to carry out basic reading, writing, and communication. So the CET-4 scores were collected among these 56 participants. One student had a CET-4 score of less than 300. Ten students had scores ranging from 300 to 400. 29 students had scores between 400 and 500. And 10 students had scores from 500 to 600. The highest score in this class was 587. The course “Academic English” was offered in the third semester of undergraduate studies, spanning one semester with an hour and a half per week.

### 2.3. Data Collection and Analysis

As mentioned in the research questions, the goal is to understand the strategies used by students during academic English reading. Methods were employed such as pre-class reports, post-class summaries, reflective journals, notes, and compositions. In the process of completing this study, two objectives should be kept in mind: first, students’ goal is to learn; second, researchers’ goal is to collect viable data (Dornyei, 2007).

During the course, the participants were required to complete corresponding reading tasks and record their problems encountered during reading in reflective journals and notes. These notes were submitted at the end of each unit. The course consisted of five units, of which four units were fully implemented as per the teaching plan, with the final unit serving as self-study content for students. Therefore, reflective journals were submitted four times. Three students did not complete the reflective journal for Unit 2, four did not complete it for Unit 4, and one did not complete it for Unit 5. A total of 216 reflective journals were collected in the end.

Data analysis was conducted using both inductive and deductive coding methods. Initially, the reading strategy classification method proposed by Li and Munby (1996) was adopted, which provides a wide range of reading strategies with a focus on academic reading. Due to the diversity of students and data collection methods, the researcher readjusted the strategies in the study to more accurately describe our data.

**Table 1.** Participants’ reading strategies and examples.

No.	Reading Strategy	Example (Derived from Reflection Journals and Notes)
1	Relating to Tasks	“I often wrote down some excerpts that I think might be useful for our group presentation. This helps me better prepare the content, ensuring key points are covered.”
2	Preparing for Reading	“I prepare a pen and notebook, and wrote down unfamiliar words or words with different meanings in the context. This allows me to promptly record new vocabulary and important information during reading.”
3	Consulting Background Knowledge Related to the Topic	“To gain a deeper and clearer understanding of the article, especially for fields I haven’t encountered before, it’s difficult to comprehend the article without relevant background knowledge. Therefore, I will consult related materials beforehand to understand the article’s context.”

**Continued**

4	Constructing a mind map	“To clearly grasp what I have read, I reconstruct the reading content using mind mapping. This helps me clarify the article’s structure and logical relationships.”
5	Predicting the Article’s Theme	“After seeing the article’s title, I predict its main theme. This aids me in better grasping the article’s direction during reading, enhancing reading efficiency.”
6	Taking Notes	“As I read the entire article, I take notes alongside. This allows me to quickly locate key points when reviewing later.”
7	Underlining to Highlight Information	“During reading, I identify key concepts and viewpoints, or annotate places where I have feelings or questions, using underlining to emphasize. This aids me in quickly reviewing and understanding after reading.”
8	Consulting an Electronic Dictionary	“Whenever I encounter unfamiliar words, I consult an electronic dictionary. This helps me quickly understand word meanings, avoiding interruptions in reading.”
9	Rereading	“I reread certain paragraphs of the article, especially those that are difficult to understand or contain important information. Through rereading, I can better grasp and comprehend these contents.”
10	Guessing Word Meanings from Context	“Instead of using a dictionary, I guess the meanings of most difficult and unknown words based on the context of the sentence. This method exercises my contextual understanding ability and improves reading speed.”
11	Translating into Chinese	“When I start reading, I try to understand unfamiliar words within their context. Although I can’t accurately translate words into Chinese, it helps me comprehend these words and grasp the article’s main idea. This method is particularly useful during initial reading.”

A total of 11 categories were coded, with examples from reflection journals and notes listed in the table above. We define strategies as the actions taken by participants while reading academic articles. Therefore, in our analysis, we did not distinguish between conscious and unconscious strategies. Although our research design was observed to capture strategies that participants use “routinely” (Grabe, 2008), we were unable to ascertain whether participants were aware of what they were doing and thus did not report their actions in the reflection journals. During the coding process, all instances of strategies were coded. However, since the purpose of this study was to investigate the range of strategies used by participants, multiple mentions of the same strategy used by the same student in the same text were only counted once in the results.

### 3. Results

This section analyzes the results and addresses the research questions. Firstly, it addresses the first research question by exploring the relevant reading strategies employed by participants. It then explains the second research question, which is how main content was extracted from reflection journals to explain the strategies participants used to complete reading tasks.

#### 3.1. Reading Strategies Used by Participants

Through the analysis of reflection journals, the researchers arrived at the classifi-

cations presented in **Table 1**. The range of strategies obtained from the student participants aligns closely with the findings of experienced researchers (Li & Munby, 1996). Participants recorded preparatory activities before starting to read, including predicting the scope of the task, anticipating the content of the reading, and skimming for key points. During reading, participants reported understanding the content and vocabulary, sometimes rereading the entire article or specific sections. In terms of setting reading goals and grasping the article's content, participants considered the purpose and outcome of the reading task, reflecting the success of their reading methods.

### 3.2. Themes Presented in Reflective Journals

The researcher conducted a more detailed analysis and discussion of the participants' reading behaviors, assessing the usefulness of the reflective journals to gain deeper insights into the strategies employed by the subjects. This discussion is interpreted through excerpts from the data.

#### Vocabulary-Related Strategies

The participants' reflections on vocabulary helped the researcher understand the use of their strategies. Researchers such as Nation (2001) have established the importance of vocabulary in reading. To enable subjects to quickly process articles in college English courses, especially academic English courses, it is necessary to increase their academic vocabulary (Nergis, 2013). To motivate participants to master more academic vocabulary, the researcher conducted an academic vocabulary test at the end of each unit. With the increase in academic vocabulary, participants were more motivated to clarify the main themes of the articles. After understanding the themes, vocabulary became a potential learning target during reading. Additionally, previous studies have shown that participation in vocabulary-level strategies is a commonly used reading method among participants (Malcolm, 2009).

Among the 56 subjects, 32 mentioned using electronic dictionaries in their reflections, and 5 talked about using the Oxford dictionary. This indicates that dictionary use is the most commonly employed word-related strategy. Interestingly, Hirano (2015) found that using dictionaries was not a common strategy among her second language acquisition students in American universities. This study found that most participants only mentioned encountering "difficult" words that affected their understanding of the reading, and only a few of them listed words related to the theme that caused problems in their reflective journals, such as the phrase "invisible hand" in Unit 2 on business ethics. While participants understood the basic meanings of these words, as theme-related terminology, their specific meanings in the academic context remained unfamiliar to most subjects, with only 7 subjects looking up their meanings online.

The majority of them used electronic dictionaries such as Aiciba and Youdao. Although these online dictionaries are portable and convenient for quick lookups, they do not possess the authority of dictionaries like Oxford, Longman, and Col-

lins. For example, the word “acquirement” cannot be found in authoritative dictionaries but only exists in online dictionaries like Aiciba, and many English learning websites have cited these online dictionary explanations to differentiate between “acquirement” and “acquisition”. Therefore, participants should be encouraged to use authoritative dictionaries when reading academic texts. In this study, although a few of them used Longman and Oxford dictionaries, they only focused on simple Chinese annotations, ignoring detailed English annotations and paying little attention to part of speech. Furthermore, most of them searched for terminology online but were unsure how to use or find specialized dictionaries or encyclopedias. The research by [Chung and Nation \(2003\)](#) on specialized vocabulary in academic texts deserves attention from academic English researchers. They found that through a lexical analyzer, most specialized vocabulary in academic texts can be classified as high-frequency or academic word list items ([Coxhead, 2000](#)). Therefore, students using general dictionaries will find general definitions of words rather than the intended meanings in specific fields, such as the phrase “political correctness” in Unit 8 on globalization, where only three students indicated difficulty understanding the sentence in which the phrase appeared, while others incorrectly interpreted it as “correct political views”.

When reading the second article in each unit, most participants mentioned using dictionaries to solve unknown words. Four of them reported being able to complete the second article more easily after becoming familiar with the specialized vocabulary in the first article.

**Example 1:**

“I was surprised to finish Text B of Unit 2 on *Business Ethics* quickly, spending less than half the time it took to read Text A. Maybe the text was easier, because I now understand a lot of academic vocabulary related to economics.”

However, some participants mentioned spending a lot of time looking up words and forgetting the main ideas of previous paragraphs due to excessive lookups. Therefore, the study found that when processing Text B of each unit, the number of unknown words they needed to look up ranged from “almost no new words” to “frequent encounters with new words”. Eight participants mentioned using the dictionary only during a second reading to complete the reading task, while the rest looked up words during their initial reading.

Participants also employed different strategies to deal with unknown or questionable words, such as writing them in the margins of textbooks or copying them into notebooks. However, few of them associated these words with the articles from which they originated, merely looking up their meanings. This emphasizes the importance of teachers clearly instructing methods for learning academic vocabulary.

Only seven students mentioned guessing word meanings from context.

**Example 2:**

“For most unknown words, I guess their meanings from the context.”

However, these seven students all scored above 500 on the CET-4, having a solid foundation in English vocabulary and grammar. Guessing word meanings from context is not a new strategy for language learners, but for some in academic English reading, the context of unknown words does not contain enough familiar words to help infer meanings. Considering the students' unfamiliarity with academic discourse, this is reasonable.

Five participants not only focused on theme-related terminology when reading but also deliberately sought to understand the academic discourse features presented in the academic articles. This aligns with the "writer's reading" behavior described by Hirvela (2004), which involves paying attention to unknown vocabulary from a content perspective and striving to develop vocabulary from a stylistic angle.

**Example 3:**

"Because our group is presenting a classroom report next week, focusing on explaining terminology. While reading the article, I paid special attention to the author's explanation of behaviorism and some cleverly expressed vocabulary, which I underlined. Maybe they will be useful for our report."

Therefore, participants experimented with different vocabulary processing methods. During college, students should adopt more explicit language learning strategies, which may not have been emphasized in their previous English learning experiences. This suggests that high-level students need targeted instruction on how to handle new vocabulary and grasp the main ideas of academic papers in specific fields.

**From "Input" of Reading to "Output" of Writing**

It explores strategies related to participants' reading goals, where reading is no longer an independent activity but is connected to classroom presentations, after-class summaries, and writing activities, transforming from the "input" of professional knowledge into utilized "output". After reading, participants are required to perform summary tasks based on the text, which may be brief summaries, mind maps, or writing activities related to unit themes.

The majority of participants have associated reading with learning tasks. However, most of their reading ends with summarizing the article rather than completing the final writing task. Interestingly, one participant pointed out that the absence of tasks made them feel "unsettled", suggesting that participants may be accustomed to external tasks or goals related to academic English courses.

**Example 4:**

"I found that I felt a bit lost when starting to read without any reading-related tasks. By writing summaries, I felt that I did well in the previous unit, but this time I could only rely more on my notes and read carefully again."

It can be seen that this participant has recognized the importance of tasks. Furthermore, by using summaries in their reflective journals to achieve personal learning goals, the participant demonstrates self-discipline and improved meta-

cognitive abilities.

Twenty-one participants mentioned recording keywords, sentences, or paragraphs in the text while reading, intending to use them to construct summaries. In terms of connecting reading to long-term goals (such as dissertations), participants read the text with different purposes. One participant viewed Text A in Unit 4 as a model for argumentative writing. Seven participants focused on the content of the reading, seeking “ideas I might want to express in my writing”. Three participants paid close attention to vocabulary and fixed phrases, believing they improved the language quality of their own writing. Another five participants used the read articles as models for their own papers. However, participants who valued writing tasks tended to focus more on short-term goals (such as course assignments) rather than writing dissertations. While some participants simply noted the summary tasks, others used different strategies, such as identifying useful sections in academic papers, mining content, and noticing superficial functions that could aid in writing dissertations.

#### 4. Discussion

The purpose of this study is to gain an in-depth understanding of how non-English major Chinese students who are new to academic English reading address reading problems. Therefore, the main contributions, as elaborated in reflective journals and notes, are how students handle academic reading problems during self-study, and investigate the potential of reflective journals and notes as pedagogical and methodological tools. Given the increasing globalization of higher education, this issue is of interest not only to EAP teachers but also to teachers teaching academic English in other disciplines.

Overall, these research results in support previous studies. However, while studying similarly inexperienced student groups, there are also notable omissions. For example, [Hirano \(2015\)](#) found in her study that students adopted a collaborative reading approach, either by reading in groups or discussing questions after reading. In contrast, none of the students in our study engaged in any collaborative activities while reading, even though subsequent presentation tasks, summary tasks, and final paper tasks were completed in groups. During the research process, some participants were found to intentionally seek isolation. This may mean that students miss an opportunity because collaborative reading allows for discussions around their experiences and reading methods, potentially challenging each other's interpretations. This seems particularly applicable to the participants in this study, who, despite being relatively consistent in their previous educational experiences, native languages, and academic discipline perspectives, have considerable differences in their academic reading. Encouraging collaborative reading can become a way for offline and online collaborative learning. Offline refers to at least allowing a small group of people, such as EAP teachers, to access reflective journals and notes, while online refers to utilizing online learning platforms, such as QQ and WeChat chat rooms, to encourage students to understand academic reading as a collaborative writing exercise rather than solitary reading.

Another notable omission in the study is the influence of native language on students. Previous studies have shown that students whose native language is not English and who have lower proficiency levels may translate academic papers (Malcolm, 2009). Li and Munby (1996) observed that “for second-language readers who rely on their first language for comprehending and translating the content of the second language into the first language is a unique strategy”. In their study, postgraduates extensively borrowed from this method. Although sentence-by-sentence translation is less ideal, studies have shown that for advanced readers, combining the use of the native language with other strategies is very important and useful (Upton & Leethompson, 2001). Therefore, university students should be assured that their native language does not necessarily need to be avoided in the process of learning academic English.

From a metacognitive perspective, the effectiveness of using some well-defined strategies is intuitive. For example, when asked to complete summary tasks for Unit 2 Text B or C, most participants chose the shorter and seemingly simpler Text B, with few opting for the longer and more challenging text. Therefore, it seems insufficient to merely provide students with reading strategies; obviously, students need to be urged and checked for the success of their chosen strategies (Grabe, 2008) and to find appropriate strategies to arrange for re-reading. Similarly, if successful, students may require external encouragement to facilitate the smooth execution of strategies, which means more teacher involvement is needed.

## 5. Suggestion

As the discussion above reveals, two teaching suggestions are given as below:

1) Create contexts that are commensurate with students’ cognitive levels. Classroom instruction should employ problem-oriented, heuristic, and inquiry-based methods to create conditions for learning. By enabling students to learn from the issues encountered and mistakes made during project research, confusion regarding academic English learning can be alleviated, aiding students in internalizing knowledge and constructing meaning.

2) Foster a relaxed classroom interaction environment. In the classroom, students’ questions to their peers should aim to provide feedback and enhance the depth of critical thinking. Teachers should include interactions in students’ classroom activity scores rather than using them as a record for the questioned student’s grades. This approach encourages students to ask questions and interact boldly, livening up the classroom atmosphere. It also helps eliminate students’ concerns about peer evaluations potentially damaging friendships and reduces feelings of mistrust, thereby contributing to the enhancement of their academic abilities.

## 6. Conclusion

Reflective journals and notes, as tools, provide valuable insights into students’ self-interpretation while reading outside of class over an extended period. Therefore,

reflective journals and notes can inform needs analysis or teaching interventions in subsequent curriculum design. From a research perspective, the impact of teacher input and strategy selection can also be studied using a triangulation method that assesses interview data and reading performance. A longitudinal study tracking students' use of reading strategies will also provide important recommendations for students' development as academic readers.

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### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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