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THE EFFECT OF META-COGNITIVE READING STRATEGY INSTRUCTION ON ENGLISH MAJORS' AND NON-ENGLISH MAJORS' READING PROFICIENCY

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ABSTRACT – The application of meta-cognitive theory into practice has attracted many researchers' attention with the penetration of Chinese English teaching reform. Extended research has revealed that meta-cognitive reading strategy instruction could enhance reading comprehension ability. To deal with the current situation of limited class hours for English majors and non-English-majors in X university and their relatively low reading scores, explicit meta-cognitive reading strategy instruction has been provided to improve their reading ability. Questionnaires, independent samples t-tests, correlation analyses, and pretest and post-test data have all been analyzed using SPSS. According to the statistical analyses, there are notable differences in the awareness of meta-cognitive reading strategies between the experimental and control groups of students majoring in English and non-majoring in English. The students in the experimental group have demonstrated a greater understanding of meta-cognitive reading strategies than their counterparts in the control group. The aforementioned analyses' findings demonstrate that students' reading abilities were increased, their awareness of meta-cognitive reading strategies was raised, and their actual strategy usage helped to raise reading ability. Explicit meta-cognitive reading strategy education was found to be an effective method for achieving these goals. Both language teachers and students should benefit from the study's theoretical and pedagogical ramifications.

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INTRODUCTION

Making sense of print is a basic definition of reading. Making sense of print requires the cooperation of four essential components: the reader, the text, reading strategies, and fluency (Anderson, 2008). It's a cognitive process that calls for a range of abilities and tactics. Numerous elements, including prior knowledge, vocabulary, fluency, active reading abilities, and critical thinking, are involved in reading comprehension. Accordingly, as several scholars have highlighted, important aspects in this regard should be given attention, given the importance of reading comprehension in L2 accomplishment. Accordingly, knowing which reading methods to employ enables students to get the greatest value from a text (Anderson, 2002; Mokhtari & Sheorey, 2002; Oxford, 1994). A student's comprehension of the reading materials improves if they start reading strategically. According to Grabe (2009), a strategic reader is conscious of how well they are understanding texts that are challenging for them and knows how to apply suitable sets of tactics to improve their comprehension.

Research on the awareness and application of metacognitive reading strategies has been conducted in recent years (Khurram, 2022; Maryam, Ihrom, & Nurlaelawati 2019; Razak, Gani, & Ithnin, 2018; Ahmadi, Ismail, & Abdullah, 2013).Among the various categories proposed for metacognitive reading methods, the model put forth by Mokhtari and Sheorey (2002) fits the present study. The greatest explanation of the primary rationale for using this scale comes from Mokhtari and Sheorey (2002). According to them, it is specifically made to gauge L2 learners' metacognitive reading techniques while they read academic texts. Global reading strategies (GLOB), problem-solving reading strategies (PROB), and support reading strategies (SUP) are the three subcategories identified in Razak, Gani, and Ithnin's (2018) model of the survey of reading strategies, which consists of thirty items.As a result, determining the extent to which students employ metacognitive reading strategies is crucial for

informing the creation of educational initiatives and the procedures involved in selecting educational activities (Kadri, Ahmet, 2022).

A key component of the L2 learning process is reading comprehension, which is one of the primary sources of information that learners rely on (Harmer, 2007).The study of reading in a second language (L2) has grown significantly during the last forty years. More research has been done recently, especially on how meta-cognitive knowledge—which is crucial for utilizing general literacy in both L1 and L2 reading—allows readers of both languages to control and regulate how much they read (Van Gelderen et al., 2004; Pintrich, Wolters, & Baxter, 2000; Schoonen, Hulstijn, & Bossers, 1998).Nonetheless, there are still unexplored areas of meta-cognitive knowledge in spite of the abundance of studies that have been published. First, most of the research have been limited to younger bilingual readers in elementary and early secondary schools. Since there is always cognitive development as an individual acquires reading literacy, contributions of meta-cognitive knowledge to L2 reading might display different characteristics for readers of different ages. Second, cognate and alphabetic languages have been the subject of the majority of research (Bernhardt, 2005). There is currently a shortage of research on learners from the background of non-alphabetic systems like Chinese. Third, although a number of scholars (e.g., Pintrich, 2002; Hacker, 1998; Flavell, 1979) have concurred on the motivational and affective components of meta-cognitive knowledge, more research is still needed in areas like self-knowledge, engagement, interest, and motivational beliefs.

The Ministry of Education in China mandates that English be taught in school curricula. It is taught starting in middle school and continuing through senior middle school and higher education. College English is a required course in higher education for postgraduates, first-year PhD candidates, and undergraduates who do not major in English. Majors in English take additional courses related to studying the language. Reading is essential for academic growth, especially for students who must study a significant quantity of foreign language content for their specialized courses (McDonough & Shaw, 2013). Chinese language learners are said to acquire English most easily and effectively through reading. Additionally, it's thought to be one of the key ways that pupils receive language information in "an acquisition-poor environment". Additionally, teachers find it more challenging to understand how students use their meta-cognitive knowledge to govern their reading process because the reading comprehension process is invisible.

PROBLEM STATEMENT

Second language acquisition research is interested in the association between meta-cognitive reading methods and college students' reading skills in English as a foreign language. According to earlier research, metacognitive strategy instruction can greatly improve students' motivation, self-evaluation of their reading abilities, perceptions of reading processes and strategies, and metacognitive knowledge (Kusiak, 2001). The purpose of this study was to investigate the connection between reading proficiency and metacognitive reading methods. It is hoped that the research's conclusions would help educators better understand how to help students who struggle with L2 reading because of their meta-cognitive issues. In order to better understand how teaching various metacognitive strategies—such as global reading strategies, problem solving reading strategies, and support reading strategies—and varying proficiency levels relate to enhancing students' reading skills, this thesis looks at these relationships. The following query is put up to address the research problem and offer a clear direction to drive the research process:

What is the effects of meta-cognitive reading strategy instruction on English-majors' and non-English majors meta-cognitive reading strategy awareness and reading comprehension proficiency？

This study should be able to shed some light on the learning and teaching of metacognitive reading strategies for both English majors and non-majors that hasn't been explored in previous studies but is unique to Chinese universities.The information may enrich the learning and teaching theory and practice of meta-cognitive reading strategy research in Chinese tertiary education.

LITERATURE REVIEW

The Complicated Nature of Reading

As defined by Anderson in 2008, making sense of print is a basic definition of reading. Making sense of print requires the cooperation of four essential components: the reader, the text, reading strategies, and fluency.

Reading was defined by McLaughlin (1969) as the acquisition of the intended meaning from written symbols. In this light, reading seemed to be a passive process of word recognition. Meaning seemed to be out there in the written input, and can be acquired by the reader adding up the small components.

Reading is viewed as a process or a collection of subprocesses by certain academics and theorists. For example, Urquhart and Weir (1998) noted that reading is the process of obtaining and deciphering language-encoded information through print media.The reader played a more active role in "interpreting" information than simply "receiving" information from written symbols. Just and Carpenter (1980: 331)argued that "reading can be construed as the coordinated execution of a number of processing stages such as word encoding, lexical access assigning semantic roles, and relating the information in a given sentence to previous sentences and previous knowledge."

Over the last thirty years, reading has gained more acceptance as a multivariate process—or, to use Grabe and Stoller's word, "multidimensional" ability—than as a single-factor process (e.g. Grabe 2009; Rapp et al. 2007; Zwaan & Rapp 2006; Nassaji 2003; Gough et al. 1992).

Views on Reading Comprehension

According to the behavioral-based perspective, reading comprehension is the ability to decipher written words, phrases, sentences, and texts. It is believed that reading is a talent made up of several skills. These arranged sub-skills can be learned by beginning readers to improve their comprehension. Readers are considered experts who can understand what they read once they have mastered the necessary abilities (Dole, et al., 1991). From this perspective, readers are passive recipients who have acquired a great deal of sub-skills and routinely apply them to all documents in order to obtain information.

Rumelhart (1980) asserts that all readers want to be able to create meaning from the text by drawing on their prior knowledge, existing knowledge, and a few indications from the text. Additionally, the knowledge encompasses general information about causal chains and social relationships as well as specialized knowledge about the text's subject matter and structure. Expert readers have a variety of flexible, adaptive reading techniques in addition to their knowledge, which they can employ to absorb literature and assess their comprehension of it.

Baker and Brown (1984) believe that reading comprehension should involve meta-cognition and cognition. They think that proficient readers would be able to not only decipher the reading materials and employ methods while reading, but they would also be conscious of these tactics and able to govern and manage them. The control, known as meta-cognition, entails reflecting on one's reading activities (Block, 1992).

Meta-cognition

John Flavell (1976) defines meta-cognition as "knowledge concerning one's own cognitive process and products", and it involves "active monitoring and consequent regulation and orchestration of these processes"

Although the term "meta-cognition" has been defined differently, scholars generally agree that it refers to "thinking about thinking." Anderson (2002) said. In general, it can be described as "knowing how to go about achieving a cognitive goal" and "conscious awareness and control of one's own cognitive processes," which includes recognizing when one understands or does not grasp what one is

reading (Zhang, 1999). Meta-cognition can be broadly defined as an individual's awareness, knowledge, and deliberate effort to manage and govern their cognitive processes.

Meta-cognition in reading refers to readers' awareness of their comprehension levels and their capacity to control their comprehension process as they move through a text (Palincsar & Brown, 1987). It refers to being aware of the variables that influence reading comprehension and being able to control them. Through metacognition, students can take charge of their own reading and become more conscious of who they are as learners (Palincsar & Ransom, 1988).

Meta-cognition and Reading Comprehension

In the field of reading, Brown (1985) defines meta-cognitive knowledge as the knowledge readers have "about their cognitive resources and the compatibility between themselves as readers and the demands of a variety of reading situations". This term relates to the capacity to examine one's own thought processes and to be aware of one's own actions when reading. To carry out thought processes and reading activities, one must possess the awareness or understanding of their reading techniques. In order to possess meta-cognitive knowledge, readers must constantly be aware of what they are reading, what they hope to learn from it, and how well they grasp a text. It should be possible for readers to identify the issues and take appropriate corrective action to fix comprehension problems or get past reading challenges. The term "meta-cognitive regulation" describes the actual meta-cognitive processes people carry out and control when they are reading (Baker & Brown, 1984).

As a means of monitoring one's comprehension, reading comprehension experts Brown, Armbruster, and Baker (1986) define meta-cognitive regulation as the reader's control over strategies and behaviors, which are employed to recognize and resolve textual challenges. The capacity of readers to adopt self-regulatory mechanisms to finish reading assignments and thought processes is known as meta-cognitive regulation. When reading, self-regulation techniques can assist readers in altering their thoughts or actions to better align with their objectives as individuals or the requirements of reading tasks (Pintrich et al., 2000).

Meta-cognitive strategies, described by Oxford (1990), are "actions which go beyond purely cognitive devices, and which provide learners a way to coordinate their own learning process" (p.133). According to Ellis (1994), met-acognitive methods are an attempt to control language learning through planning, observing, and assessing while utilizing information about cognitive processes.

Meta-cognitive methods in reading are self-regulatory and self-monitoring practices that center on the act of reading as well as its end result. Additionally, they include readers' awareness of their own cognitive abilities, their capacity to assess the cognitive demands of a reading task, and their understanding of when and how to apply a particular cognitive reading strategy in light of the difficulty of the text, situational constraints, and reader ability (Gourgey, 2001; Baker & Brown, 1984).

METHODOLOGY

Research Design

Every participant will receive a copy of the SORS questionnaire at the start and end of the semester. At the start of the semester and following the completion of 15 weeks of instruction in meta-cognitive reading strategies, both English majors and non-majors in the experimental group will take the reading comprehension tests, the CET 4 (College English Test Band 4) and the NMET (National Matriculation English test). In order to determine whether metacognitive reading strategies differ before and after meta-cognitive reading strategies teaching, the findings of the two SORS surveys will be compared. To see if teaching students the meta-cognitive reading technique had an effect on their reading performance, the results of the two CET4 reading exams and the NMET reading test were compared.

Participants

Class A and Class B of 2022 batch of Business English and classes C and D of 2022 batch of Dance-sport were randomly selected as subjects.

Finding a measurement to determine a student's reading competence level is genuinely challenging because language competency is a vague concept (Canale, 1983). The terms "English reading proficiency" in this study refer to test results for college admission. The college admission exam has a total score of 150. A test result of 100 or more is considered high proficiency, whereas a score of 75 or lower is considered low proficiency. First-year Business English majors and Dance-sport students from four classes per level are involved in this study:

Table 1. Four Classes of Participants

EG	CG	Score of College Entrance Examination	English Proficiency Level
Class A (33)	Class B (35)	above 100	high
Class C (33)	Class D (34)	below 75	low

Materials

The study's questionnaire was modified by Zhang (Zhang, 2009) based on Mokhtari and Sheorey's Survey of Reading Strategies (SORS) (2002). The three strategy categories had the following internal reliability coefficients (Cronbach's alpha): SUP (α =.720), PROB (α =.790), and GLOB (α =.780). According to Glass & Hopkins (1996), the study's general dependability was guaranteed by the overall reliability coefficient (α =.85).

Table 2. Categorisation and Description of EFL Reading Strategies

Category	Description	Example	Item
Global reading strategies(GLOB)	The intentional, carefully planned techniques by which learners monitor or manage their reading	Having the purpose in mind; previewing the text	1-12
Problem-solving strategies(PROB)	The localized, focused techniques used when problems develop in understanding textual information	Adjusting reading speed; rereading the text	13-19
Support strategies(SUP)	The basic support mechanisms intended to aid the reader in comprehending the text	Using dictionaries; taking notes	20-28

Note: Adapted from Mokhtari and Sheorey (2002, p.4).

With the deepening of the national English test reform in China, College English Test Band four has undergone several changes. Since December 2013, the paper structure, test content, test question type, score ratio, corresponding scores and test duration of CET-4 has been changed. In this study, the CET-4 I of 2019 is used as the pretest paper and the CET-4 II of 2019 is used as the post-test paper for English majors.

In 2014, the college entrance examination(the Gaokao)has gone through reform. The paper structure, test content, test question type, score ratio, corresponding scores and test duration of has been changed according to the requirements of the ministry of Education in China. College Entrance Examination I (2020) and II are used as the pretest and post-test paper for non-English majors.

Procedure

A questionnaire on meta-cognitive strategy use and a pretest on reading comprehension are administered to 135 students participating in this quasi-experiment before formal strategy instruction. During the first week of this study, both experimental groups are given a brief introduction about meta-cognitive reading strategy. Formal meta-cognitive strategy instruction begins after they have understood basic concepts concerning each strategy to be taught.

The meta-cognitive reading strategy instruction will be conducted for 15 weeks and the instruction incorporated with the regular class time of intensive reading course for first-year Business English students and students majoring in dance-sport. It will begin in the second week of the semester.

In present study, meta-cognitive reading strategy instruction is cultivated through explicit classroom instruction, in-class practices.

During instruction, the instructor/researcher first assessed student's knowledge of strategies via the first questionnaire at the beginning of the first class. Next, students were familiarized with each meta-cognitive strategy through the instructor's explanations and modeling as well as individual student's participation during teacher-led whole class instruction. After students got familiar with a strategy, they worked individually, in pairs, in groups or in whole class activities to practice the strategy, and the instructor provided guidance and feedback at the same time. These practices were scaffolded until students could work independently. Students were given feedback related to strategy learning and strategy use.

The same questionnaire was given to students at the last English class following 15 weeks of explicit instruction in meta-cognitive reading strategies. The purpose of the questionnaire was to gauge students' everyday use of these strategies when reading and to assess the impact of the instruction on the experiment group. The strategy instruction was followed by a post-test two weeks later. The post-test is taken simultaneously by all EG and CG students, and the same set of teachers administer and grade the exam papers in the same way.The post-test results were calculated and examined.

Data Analysis

The Statistical Package for Social Sciences (SPSS) 23.0 for Windows is used to conduct quantitative analyses on the data gathered from pretest scores, posttest scores, and questionnaire results. The means of the four groups of cases are compared using the independent-samples t-test. Assuming that the data satisfy the t-test assumptions, these tests are carried out. The relationship between variables can be measured using correlations. Throughout the investigation, the thresholds $p<0.05$ and $p<0.01$ are applied to establish significance (95%- and 99%-confidence intervals for the mean).

RESULTS

When Before the teaching of metacognitive methods, the experimental group and the control group (Group A and Group B) of English majors were compared for differences in metacognitive knowledge. The results are displayed in the following table and were analyzed using the independent sample t-test. It can be found that there were no significant differences in the global strategy ($t=1.681$, $P>0.05$), problem-solving strategy ($t=1.139$, $P>0.05$), and supporting strategy ($t=0.567$, $P>0.05$) between the experimental group and the control group of English majors.

Table 3. Difference Analysis of Meta-cognitive Strategies of Group A and Group B (Pretest)

Meta-cognitive strategies	Group	Number of cases	Mean	Standard deviation	t	P
Global Strategies	EG(A)	33	3.937	0.568	1.681	0.097
	CG(B)	35	3.726	0.461		
Problem-solving Strategies	EG(A)	33	3.905	0.520	1.139	0.259
	CG(B)	35	3.755	0.559		
Supporting Strategies	EG(A)	33	3.532	0.709	0.567	0.572
	CG(B)	35	3.441	0.605		

Table 4. Difference Analysis of Meta-cognitive Strategies of Group C and Group D (Pretest)

Meta-cognitive strategies	Group	Number of cases	Mean	Standard deviation	t	P
Global Strategies	EG(C)	33	3.679	0.574	0.833	0.408
	CG(D)	34	3.539	0.782		
Problem-solving Strategies	EG(C)	33	3.766	0.663	1.810	0.075
	CG(D)	34	3.416	0.898		
Supporting Strategies	EG(C)	33	3.743	0.625	0.609	0.545
	CG(D)	34	3.634	0.828		

There were no significant differences between the experimental group and the control group of non-English majors in the global strategy (t=0.833, P>0.05), problem-solving strategy (t=1.810, P>0.05), or supporting strategy (t=0.609, P>0.05), according to the results displayed in the above table.

Table 5. Difference Analysis of Meta-cognitive Strategies of Group A and Group B (Post-test)

Meta-cognitive strategies	Group	Number of cases	mean	Standard deviation	t	P
Global Strategies	EG(A)	33	4.361	0.335	4.795	0.000
	CG(B)	35	3.755	0.664		
Problem-solving Strategies	EG(A)	33	3.766	0.702	-1.148	0.255
	CG(B)	35	3.943	0.564		
Supporting Strategies	EG(A)	33	3.458	0.714	-1.900	0.062
	CG(B)	35	3.765	0.615		

The results are shown in the table above. The results show that there is a substantial difference in the global strategies of the experimental group (Group A) and the control group (Group B) of English majors (t=4.795, P<0.01). The score of the experimental group is much greater than that of the control group. There is no significant difference between the problem-solving approach (t=-1.148, P>0.05) and the assistance strategy (t=-1.900, P>0.05).

Table 6. Difference Analysis of Meta-cognitive Strategies of Group C and Group D (post-test)

Meta-cognitive strategies	Group	Number of cases	mean	Standard deviation	t	P
Global Strategies	EG(C)	33	4.025	0.872	1.164	0.249
	CG(D)	34	3.792	0.768		
Problem-solving Strategies	EG(C)	33	3.887	0.961	-0.424	0.673
	CG(D)	34	3.979	0.803		
Supporting Strategies	EG(C)	33	4.539	0.665	3.951	0.000
	CG(D)	34	3.840	0.777		

The global strategy (t=1.164, P>0.05) and problem-solving strategy (t=-0.424, P>0.05) of the experimental group (Group C) and the control group of non-English majors are found to be significantly similar. The support strategies differ significantly (t=3.951, P<0.05). The experimental group's score is noticeably higher than the control group's.

Table 7. Differences in Reading Scores of Group A and Group B in CET-4 Reading Test Before the Instruction of Meta-Cognitive Strategy.

Test	Group	Number of Cases	Average	Standard deviation	t	P
Pretest Scores of CET-4	Group A	36	154.338	32.803	1.913	0.060
	Group B	35	139.907	30.700		

The reading scores of the CET-4 test in the experimental group and control group of English majors are found to be similar (t=1.913, P>0.05). The outcome demonstrates that there is little difference in the experimental group's and the control group's reading comprehension exam results among English majors.

Table 8. Differences in Reading Scores of Group C and Group D in NMET Reading Test Before the Instruction of Meta-Cognitive Strategy.

Test	Group	Number of Cases	Average	Standard deviation	t	P
Pretest Scores of NMET	Group C	33	18.424	7.344	0.113	0.932
	Group D	34	18.235	6.850		

The reading scores of the experimental group of non-English majors (Group C) and the control group of non-English majors (Group D) do not significantly differ from one another (t=0.113, P>0.05).The findings, which form the basis of this study, indicate that there is little difference in the reading comprehension test scores of the experimental group and the control group of English majors.

Table 9. Differences in Reading Scores of Group A and Group B in CET-4 Reading Test After the Instruction of Meta-Cognitive Strategy.

Test	Group	Number of Cases	Average	Standard deviation	t	P
Pretest Scores of CET-4	Group A	33	164.888	32.538	2.374	0.020
	Group B	35	124.959	35.433		

According to the results of the independent sample t-test, there is a significant difference in the reading exam scores between the experimental group of English majors (Group A) and the control group (Group B) (t=2.374, P<0.05). Group A, the experimental group, had a much higher score than Group B, the control group.

Table 10. Differences in Reading Scores of Group C and Group D in NMET Reading Test After the Instruction of Meta-Cognitive Strategy.

Test	Group	Number of Cases	Average	Standard deviation	t	P
Pretest Scores of NMET	Group C	33	19.394	8.116	0.240	0.811
	Group D	34	18.941	7.340		

It is discovered that there is no discernible difference between the experimental group (Group C) of non-English majors and the control group (Group D) of non-English majors in terms of their reading scores (t=0.240, P>0.05).

Table 11. Differences between Pretest and Post-test Results Group A of CET-4

Group A	Average	Standard Deviation	t	P
Post-test Scores of CET-4	164.888	32.538	5.107	0.000
Pretest Scores of CET-4	154.338	32.803		

The results of the CET-4 for English majors show that there are substantial variations between the pretest and post-test scores ($t = 5.107$, $P < 0.05$), with the post-test score being significantly higher than the pretest.

Table 12. Differences between Pretest and Post-test Results Group B of CET-4

Group B	Average	Standard Deviation	t	P
Post-test Scores of CET-4	147.816	27.790	1.890	0.067
Pretest Scores of CET-4	139.907	30.700		

It turned out that there was no statistically significant difference between the pretest and post-test scores ($t=1.890$, $P>0.05$) in the control group of Business English students.

Table 13. Differences between the Pretest and Post-test Results of Group C in NMET

Group C	Average	Standard Deviation	t	P
Post-test Scores of NMET	19.394	8.116	2.369	0.024
Pretest Scores of NMET	18.424	7.344		

The experimental group of non-English majors (Group C) showed a significant difference in the reading pretest and post-test scores ($t=2.369$, $P<0.05$), with the post-test score being significantly higher than the pretest score.

Table 14. Differences between Pretest and Post-test Results of Group D in NMET

Group D	Average	Standard Deviation	t	P
Post-test Scores of NMET	18.941	7.340	1.875	0.070
Pretest Scores of NMET	18.235	6.853		

The control group (Group D), which consists of non-English majors, did not show a significant difference between the scores of reading pretest and post-test ($t=1.875$, $P>0.05$).

Table 15. Pearson Correlation Analysis of Group A between Post-test Scores and Meta-cognitive Strategies

	Reading Scores of CET-4
Global Strategies	.906**
Problem-solving Strategies	.535**
Support Strategies	0.303

Pearson correlation analysis was used to examine the relationship between group A's post-test score and meta-cognitive strategy. The findings show that group A's reading score has the strongest correlation with the global strategy ($r=0.906$, $P<0.01$), followed by the problem-solving strategy ($r=0.535$, $P<0.01$), and the support strategy has the weakest correlation.

Table 16. Pearson Correlation Analysis of Group C between Post-test Scores and Meta-cognitive Strategies

	Reading Scores of NMET
Global Strategies	0.305
Problem-solving Strategies	0.320
Support Strategies	.855**

The study employed Pearson correlation analysis to examine the relationship between the meta-cognitive strategy and the post-test score of group C. The findings indicate that the reading score of the NMET examination of group C exhibits the strongest correlation with the support strategy (r=0.855, P<0.01), while the correlation with the problem-solving and global strategies is not statistically significant.

DISCUSSION

Major Factors Concerning Students' Reading Strategy Use Frequency

1. The most popular reading method among English majors is said to be Item 7: "I use context clues to help me better understand what I am reading" (Average=4.515). It could be the outcome of the professors' continuous instruction and the students' regular application of this tactic. Another strategy, item 6 "I use tables, figures, and pictures in text to increase my understanding"(Average=4.364) also belongs to the globe reading strategies. The other three most frequent used strategies are item 5 (Average=4.303), item 10 (Average=4.212) and item 8(Average=4.091).These three methods are the deliberate, methodically thought-out ways that students keep an eye on or control their reading.
2. Item 8 "I use typographical features like bold face and italics to identify key information"(Average=4.152) , item 21 "I underline or circle information in the text to help me remember it"(Average=4.152) and item 20 "I take note of the key expressions and ideas while reading to help me understand what I read"(Average=4.000) are the three strategies that are most frequently used by Dance Sports students. From the results of the questionnaire of non-English majors, a conclusion can be drawn that the non-English majors tend to use support strategies in reading. The result also shows that the non-English majors are not good at comprehend the reading materials from the globe perspective. They are likely to understand the details of the reading materials,which indicates that the students are not good at achieving deep and critical understanding of text through analyzing.This may lead to the consequences that they can not get a high score in reading tests.
3. One probable explanation for this trend in their approach utilization could be that Chinese high school English training typically concentrates on vocabulary acquisition, retention of information, and deriving conclusions from context rather than on reading from a critical perspective. The results of this study suggest that word meaning is given more weight in Chinese high school English reading instruction than understanding is gained through text structure organization. Therefore, Chinese university students typically blame their inability to comprehend what they are reading for lack of vocabulary.

Major Factors Concerning students' Reading Proficiency

4. Based on the findings, it can be said that students in the experimental group of English majors have a higher chance of understanding global strategies when they receive education in meta-cognitive techniques. They can apply global strategies to the actual reading process, which is helpful for improving English reading proficiency. However, the non-English major students of experimental group are more likely to grasp support strategies through meta-cognitive instruction. They can apply support strategies to the actual reading process, which is helpful for improving English reading proficiency.

CONCLUSION AND IMPLICATIONS

The results of the preceding Pearson association analysis demonstrate a substantial link between the post-test scores of the experimental group consisting of English majors and non-majors and the instruction of meta-cognitive strategies. The post-reading test results of the English major experimental group (Group A) were significantly impacted by the teaching of meta-cognitive techniques, as was the case with the global strategy of the group. The non-English professional experimental group (Group C) saw a significant benefit from the teaching of meta-cognitive techniques on their support methods as well as on the results of their post-reading tests.

The current study is helpful for our future research and instruction in addition to offering thorough theoretical elaboration on reading comprehension and metacognition. It provides some insights into students' meta-cognitive strategy usage in reading comprehension, and the meta-cognitive reading strategy instruction intends to put an effective form of strategy instruction into classroom procedures whickenable students to become strategic and efficient EFL readers. This study serves as a reference for researchers in undergraduate English teaching reform, curriculum design, teaching material compilation and teacher's training.

As Duffy (2002) noted that readers must be first taught strategies so that they can have a choice to use them or not. While the non-English major are not good at comprehend the reading materials from the globe perspective. They are less adept at critical and in-depth thought since they are more likely to comprehend the specifics of the reading materials.This may lead to the consequences that they can not get a high score in reading tests. This is an area where more research should be encouraged, since the non-English majors account for approximately more than ninety-five percent of the whole population of college students. More investigation is needed to better understand how teaching metacognitive reading strategies to college students who are not majoring in English can help them get higher test results.

DATA AVAILABILITY DECLARATION

The original contributions encompassed within this study are comprehensively documented in the article and accompanying supplementary materials. Should additional inquiries or data-related requests arise, kindly direct them to the attention of the corresponding author.

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CONFLICT OF INTEREST

The authors herein assert that the research undertaken was executed without the influence of any commercial or financial affiliations, which may be perceived as potential conflicts of interest.

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