A Study of L2 Reading Strategies of Medical Science and Medical-Related Students

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Abstract

This study aims to investigate L2 reading strategies of a group of medical science and medical-related students at Rangsit University. A sample of 120 respondents participated in the study. The research instrument was a questionnaire used as a means of data collection. The results showed that a number of distinctive strategies were used among the learners: cognitive reading strategies and compensating reading strategies. In conclusion, the pedagogical implications of the findings for reading instruction in the EFL context will be discussed.

Keywords: reading strategies, second language learning, undergraduate students

บทคัดย่อ

การศึกษานี้เป็นการศึกษาการใช้กลยุทธ์การอ่านในกลุ่มของผู้เรียนกลุ่มวิทยาศาสตร์การแพทย์และสาขาที่เกี่ยวข้อง ที่มหาวิทยาลัยรังสิต กลุ่มตัวอย่างจำนวน 120 คนเข้าร่วมในการศึกษาครั้งนี้ เครื่องมือวิจัยที่ใช้ในการเก็บรวบรวมข้อมูลได้ดำเนินการผ่านการแจกแบบสอบถาม ผลการวิจัยพบว่ามีกลยุทธ์การอ่านที่โดดเด่นที่ใช้ในการเรียนในหมู่ผู้เรียน ได้แก่ กลยุทธ์การอ่านแบบพุทธิปัญญาและกลยุทธ์การอ่านแบบชดเชยข้อบกพร่อง การศึกษาครั้งนี้จะอภิปรายถึงผลของการค้นพบ และข้อเสนอแนะในการเรียนการสอนทักษะการอ่านภายในบริบท การเรียนภาษาอังกฤษเป็นภาษาต่างประเทศ

คำสำคัญ: กลยุทธ์การอ่าน การเรียนรู้ภาษาที่สอง นักศึกษาระดับปริญญาตรี

1. Introduction

English has certainly played a major role across many areas for a long period of time. The number of people using English for communication is considered to be more than 2 billion and this places English as a global language. Because of its huge impact, English language is probably the only language which almost everyone needs to learn to communicate efficiently.

Being able to use English in an effective manner can lead to many advantages. If you have better English skills, it would be useful especially in social media where most of the messages on the Internet are produced in English.

As a foreign language learner, reading is a fundamental and vital skill for learning English as it is regarded as a tool for learning and acquiring English as well as gathering information. In the present day, the fact that effective reading skills can allow you to comprehend and become engaged in the world around you cannot be easily denied.

However, according to Shen and Huang (2007), despite the fact that a wide variety of reading strategies should be taught, the focus is less on classes with a large size and students of diverse abilities. In reality, the problems in many Asian countries are that teachers need to handle fifty or more students of different proficiency levels. This causes difficulties for classroom teachers to cover teaching materials at a rate that is suitable to the more competent students without leaving the less capable ones behind. This could be a major reason why a great number of language learners are not successful in reading; their reading ability is unsatisfactory.

Researchers in second or foreign language reading have long pointed out the importance of reading strategies (Brantmeier, 2002; Carrell, 1985, 1989; Janzen, 1996; Slataci & Akyel, 2002; Song, 1998). Reading strategies benefit all students. Besides, it is believed that reading strategies should be taught to the students (Carol, 2002; Carrell, 1989; Janzen, 1996).

According to Aebersold and Field (2000), in order to construct meanings from a text, readers use reading strategies as mental activities. In addition, Cohen (1990) states that reading strategies are mental processes that readers consciously choose to use in accomplishing reading tasks. Anderson (1991) emphasizes that, in order to be successful, students need to know which strategies to use and how to apply them strategically. Also, they know a matter of what strategy to use and apply them strategically.

English reading strategies are essential for language learners. Therefore, this study aims to find out reading strategies of undergraduate students. In addition, the results of the study provide the valuable information for anyone who is interested in studying or conducting the research related to reading strategies.

2. Objectives

This study aims to investigate learners' L2 reading strategies. Briefly, some advice is given in the discussion based on the previous reflection on strategies for teachers.

3. Materials and Methods

This study applied purposive sampling. The participants in this study are 120 first-year students from the Faculties of Medicine, Medical Technology, Physical Therapy, and Pharmacy at Rangsit University. Medical and medical-related students were chosen as subjects because these students were considered to have high to moderate competencein terms of their reading strategies and they generally scored among the top of the high school graduates (Saengpakdeejit, 2009).

Medical Students

30 medical students participated in the study. 60% (n=18) were female and 40% (n=12) were male. The majority of the respondents (80%) were 18-19 years old. Lastly, 80% of the respondents have been studying English for more than 10 years.

Medical Technology Students

30 medical technology students participated in the study. 50% (n=15) were female and 50% (n=15) were male. The majority of the respondents (56%) were 20-21 years old. Lastly, 84% of the respondents have been studying English for more than 10 years.

Physical Therapy Students

30 physical therapy students participated in the study. 63.3% (n=19) were female and 36.6% (n=11) were male. The majority of the respondents (63.3%) were 18-19 years old. Lastly, 70 % of the respondents have been studying English for more than 10 years.

Pharmaceutical Students

30 pharmaceutical students participated in the study. 90% (n=27) were female and 10% (n=3) were male. The majority of the respondents (90%) were 18-19 years old. Lastly, 83% of the respondents have been studying English for more than 10 years.

Regarding the context of the study, random assignment is was used in the study, and the selected participants must earn a grade of at least B from English foundation courses in order to make sure that they are not considered low-level language users. In the study, the researcher did not teach any participants.

Questionnaires were adapted from Anderson (1999), who states that the background knowledge each reader brings to the reading setting makes the orchestration of strategies such an individual process that he divided reading strategies into three different groups: cognitive reading strategies (thinking), metacognitive reading strategies (thinking about our thinking), and compensating reading strategies.

In this study, the questionnaire was used to collect the data. The researcher distributed the questionnaires to the respondents in November, 2016. The questionnaire consisted of 11 statements, which were concerned with the strategies the students used when they read English texts.

A five point Likert scale (1932) specifying the frequency of the students' use of reading strategies-Always, Often, Sometimes, Rarely, and Never - was used to calculate the average of the students' reading strategy use. Finally, the results were interpreted by using the following criteria.

Table 1 A five-point Likert scale and criteria

Scale	English Reading Strategies	Mean Range
5	Always	4.50 - 5.00
4	Often	3.50 – 4.49
3	Sometimes	2.50 – 3.49
2	Rarely	1.50 – 2.49
1	Never	1.00 – 1.49

The data were analyzed by using the Microsoft Excel to calculate mean and standard deviation. The results were presented by using tables to describe the information.

4. Results and Discussion

The results from the L2 reading strategies are presented according to the actual number of responses as well as in percentage form. The total number of participants is 120. The data have sometimes been rounded-off for convenience.

Table 2 Results of reading strategies

Statements	Group	Mean	S.D.	Interpretation
1. Identifying the main idea to help you comprehend the entire reading.	1. Medical	4.40	0.72	Often
	2. Medical Technology	3.47	0.90	Sometimes
	3. Physical Therapy	3.67	0.61	Often
	4. Pharmaceutical	3.87	0.78	often
2. Guessing the meaning of unfamiliar words or phrases to let you comprehend the statements.	1. Medical	4.39	0.71	Often
	2. Medical Technology	3.57	0.72	Often
	3. Physical Therapy	3.60	0.81	Often
	4. Pharmaceutical	3.97	0.85	Often
3. Breaking down larger phrases into smaller parts to help you understand difficult passages.	1. Medical	3.83	0.83	Often
	2. Medical Technology	3.50	0.78	Often
	3. Physical Therapy	3.73	0.87	Often
	4. Pharmaceutical	3.63	1.07	Often
4. Writing a short summary of what you read to help you understand the relationships between words and ideas.	1. Medical	3.76	1.10	Often
	2. Medical Technology	3.10	0.96	Sometimes
	3. Physical Therapy	3.57	0.77	Often
	4. Pharmaceutical	3.63	1.1	Often
5. Making lists of relevant vocabulary to prepare for new reading.	1. Medical	3.43	1.33	Sometimes
	2. Medical Technology	3.30	1.12	Sometimes
	3. Physical Therapy	3.90	0.92	Often
	4. Pharmaceutical	3.53	0.94	Often
6. Working with classmates to help you develop your reading skill.	1. Medical	3.83	1.05	Often
	2. Medical Technology	3.47	1.12	Sometimes
	3. Physical Therapy	3.67	0.84	Often
	4. Pharmaceutical	4.00	0.91	Often
7. Taking opportunities to practice what you already know to keep your progress steady	1. Medical	3.86	1.00	Often
	2. Medical Technology	3.37	0.93	Sometimes
	3. Physical Therapy	3.57	0.90	Often
	4. Pharmaceutical	3.80	1.13	Often

Statements	Group	Mean	S.D.	Interpretation
8. Taking notes to help you recall important details.	1. Medical	3.66	1.40	Often
	2. Medical Technology	3.40	1.07	Sometimes
	3. Physical Therapy	3.43	1.01	Sometimes
	4. Pharmaceutical	3.73	0.94	often
9. Trying to remember what you understand from a reading to help you develop better comprehension skills.	1. Medical	4.70	0.85	Always
	2. Medical Technology	3.40	1.07	Sometimes
	3. Physical Therapy	3.73	0.98	Often
	4. Pharmaceutical	3.97	1.00	Often
10. Picturing scenes in your mind to help you remember and understand your reading.	1. Medical	4.23	0.66	Often
	2. Medical Technology	3.40	1.07	Sometimes
	3. Physical Therapy	3.90	0.99	Often
	4. Pharmaceutical	4.10	0.88	Often
11. Classifying words into meaningful groups to help you remember them more clearly.	1. Medical	3.60	1.06	Often
	2. Medical Technology	3.40	1.07	Sometimes
	3. Physical Therapy	3.53	0.94	Often
	4. Pharmaceutical	3.73	0.87	Often

Medical Students
Cognitive reading strategies
According to Table 2, the results show that respondents most frequently "identify the main idea to help them comprehend the entire reading" represented through mean and S.D. values of 4.40 and 0.72 respectively. The least used strategy is "Writing a short summary of what you read to help you understand the relationships between words and ideas" with mean and S.D. values of 3.76 and 1.10, respectively.
Metacognitive reading strategies
In Table 2, the results reveal that respondents most frequently take opportunities to practice what they already know to keep your progress steady represented through mean and S.D. values of 3.86 and 1.00, respectively. Meanwhile, the least used strategy is "Making lists of relevant vocabulary to prepare for new reading." The mean is 3.43 and S.D. is at 1.33.
Compensating reading strategies
As in Table 2, the results show that respondents most frequently try to remember what they understand from a reading to help them develop better comprehension skills represented through mean and S.D. values of 4.70 and 0.87, respectively, whereas the least used strategy is "Classifying words into meaningful groups to help you remember them more clearly." The mean is 3.60 and S.D. is at 1.06.

Medical Technology Students
Cognitive reading strategies
In Table 2, the results reveal that respondents most frequently guess the meaning of unfamiliar words or phrases to let them comprehend the statements represented through mean and S.D. values of 3.57 and 0.72, respectively. Meanwhile, the least used strategy is "Writing a short summary of what you read to help you understand the relationships between words and ideas" ($\bar{x}$ = 3.10 and S.D. = 0.96).

Metacognitive reading strategies
According to Table 2, the results reveal that respondents most frequently work with classmates to help them develop your reading skill represented through mean and S.D. values of 3.47 and 1.12, respectively, while the least used strategy is "Making lists of relevant vocabulary to prepare for new reading" ($\bar{x}$ = 3.30 and S.D. = 1.12).

Compensating reading strategies

As in Table 2, the results show that respondents most frequently try to remember what they understand from a reading to help them develop better comprehension skills represented through mean and S.D. values of 3.77 and 0.93, respectively. On the contrary, the least used strategy is "Classifying words into meaningful groups to help you remember them more clearly" ($\bar{x}$ = 3.17 and S.D. = 1.12).

Physical Therapy Students

Cognitive reading strategies

As shown in Table 2, the results reveal that respondents most frequently break down larger pareses into smaller parts to help them understand ($\bar{x}$ = 3.73 and S.D. = 0.87). In contrast, the least used strategy is "Writing a shot summary of what you read to help you understand the relationships between words and ideas" ($\bar{x}$ = 3.57 and S.D. = 0.77).

Compensating reading strategies

Based on Table 2, the results show that respondents most frequently make lists of relevant vocabulary to prepare for new reading ($\bar{x}$ = 3.90 and S.D. 0.92). Meanwhile, the least used strategy is "Taking notes to help you recall important details" ($\bar{x}$ = 3.43 and S.D. = 1.01).

Compensating reading strategies

As seen in Table 2, the results reveal that respondents most frequently picture scenes in their mind to help them remember and understand your reading" ($\bar{x}$ = 3.90 and S.D. 0.99) whereas the least used strategy is "Classifying words into meaningful groups to help you remember them more clearly" ($\bar{x}$ = 3.53 and S.D. = 0.94).

Pharmaceutical Students

Cognitive reading strategies

According to Table 2, the results show that respondents most frequently "Guess the meaning of unfamiliar words or phrases to let you comprehend the statements." represented through mean and S.D. values of 3.97 and 0.85, respectively. Meanwhile, the least used strategy is "Writing a short summary of what you read to help you understand the relationships between words and ideas ($\bar{x}$ = 3.63 and S.D= 1.10).

Metacognitive reading strategies

In Table 2, the results reveal that respondents most frequently work with classmates to help them develop their reading skill represented through mean and S.D. values of 4.00 and 0.91, respectively. In contrast, the least used strategy is "Making lists of relevant vocabulary to prepare for new reading" ($\bar{x}$ = 3.53 and S.D. = 0.94).

Compensating reading strategies

As in Table 2, the results show that respondents most frequently picture scenes in their mind to help them remember and understand their reading. represented through mean and S.D. values of 4.10 and 0.88, respectively. Meanwhile, the least used strategy is "Classifying words into meaningful groups to help you remember them more clearly" ($\bar{x}$ = 3.73 and S.D. = 0.87).

Table 3 Results of reading strategies

reading strategies	Group	Mean	S.D.	Interpretation
1. Cognitive reading strategies	1. Medical	4.10	2.00	Often
	2. Medical Technology	3.63	1.23	Often
	3. Physical Therapy	3.64	0.76	Often
	4. Pharmaceutical	3.78	0.16	Often
2. Metacognitive reading strategies	1. Medical	3.88	0.97	Often
	2. Medical Technology	3.40	0.83	Sometimes
	3. Physical Therapy	3.64	0.92	Often
	4. Pharmaceutical	3.77	0.1	Often

reading strategies	Group	Mean	S.D.	Interpretation
3. Compensating reading strategies	1. Medical	3.97	0.68	Often
	2. Medical Technology	3.52	0.93	Often
	3. Physical Therapy	3.72	0.97	Often
	4. Pharmaceutical	3.93	0.07	Often

Medical Students

From Table 3, the highest rank of the type of reading strategies which the first year medical students often use is cognitive reading strategies represented through mean and S.D. values of is 4.10 and 2.00, respectively. The second is compensating reading strategies($\bar{x}$ = 3.97 and S.D. = 0.68). The lowest is metacognitive reading strategies ($\bar{x}$ = 3.88 and S.D. = 0.97).

Medical Technology Students

According to Table 3, the highest rank of the type of reading strategies which the first year medical technology students often use is cognitive reading strategies strategies represented through mean and S.D. values of 3.63 and 1.23, respectively. The second is compensating reading strategies ($\bar{x}$ = 3.52 and S.D. = 0.93). The lowest is metacognitive reading strategies with a mean of 3.40 and S.D. of 0.83.

Physical Therapy Students

It is revealed in Table 2 that the highest rank of the type of reading strategies which students use most is compensating reading strategies ($\bar{x}$ = 3.72 and S.D. 0.97). The second is metacognitive reading strategies ($\bar{x}$ = 3.64 and S.D. 0.92) and the lowest is cognitive reading strategies ($\bar{x}$ = 3.64 and S.D. 0.76).

Pharmaceutical Students

As in Table 2, the highest rank of the type of reading strategies which the first year pharmaceutical students often use is compensating reading strategies strategies represented through mean and S.D. values of 3.93 and 0.07, respectively. The second is cognitive reading strategies. The mean is 3.78 and S.D. is at 0.16. The lowest is metacognitive reading strategies with a mean of 3.77 and S.D. of 0.10.

5. Discussion

Based on the study, cognitive reading strategies were most frequently used by the first year students in the study. The findings of this study are inconsistent with Panicha (2010) who researched the English reading strategies used by the fourth-year resident physicians and sixth-year medical students at Siriraj hospital.

The study showed that students used more metacognitive strategies than cognitive strategies and compensating strategies. They often write vocabulary in their notebooks to prepare new reading. Additionally, the use of metacognitive strategies was found to be effective in solving their reading problems.

Clearly, metacognitive reading strategies were found to be the lowest used strategies, and the findings were not in accordance with Phakiti (2003) who investigated the relationship between the test takers' use of cognitive and metacognitive strategies in EFL reading test performance. The finding showed that the use of cognitive and metacognitive strategies increased the students' reading test performance.

It was also found that highly successful students (with a test score of 70% or above) made use of metacognitive strategies more often than the moderate students (with a test score between 46% and 69%) and unsuccessful students (with a test score of below 45%).

6. Conclusion

Based on the findings of this study, competent students like medical or medical related students tend to use cognitive strategies. Surprisingly, they tend to use metacognitive skills the least.

As mentioned in Oyetunji (2013), she believes "ESL teachers in primary and secondary schools as well as colleges need to integrate explicit strategy training into the regular reading instruction procedures (Chamot, 2005; O'Malley & Chamot, 1990; Zhang, 2008). For instance, teachers can embrace a teaching method that involves a comprehension task and strategy application and assessment, with emphasis on strategy assessment. This pedagogy might help in increasing students' strategy use and ultimately facilitate their competence in using strategies in various situations and may increase their self-confidence, motivation and self-efficacy."

As a consequence, when teaching reading, teachers can teach students these strategies explicitly and guide them to use these strategies in their learning process based on their English abilities.

This study, however, has some limitation due to a small sample size. Further studies should be conducted in different universities which offer similar programs.

7. Acknowledgements

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