

Metacognitive Reading Strategies among Undergraduates

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Abstract—The purpose of this study is to investigate the metacognitive reading strategies employed by fifty four undergraduates in Universiti Teknologi Malaysia (UTM). A questionnaire adapted from Metacognitive Awareness of Reading Strategies Inventory (MARSII) was used and data were analyzed using the Statistical Package for Social Science (SPSS) version 20 for descriptive statistics. Findings indicated that the undergraduate students have a great preference in utilizing the Problem-Solving Strategies as compared to Global Reading Strategies or Support Reading Strategies. The results of this study should help language practitioner to train students on how to adapt or use different strategies effectively when reading different types of text.

Index Terms—Global reading, metacognitive reading strategies, problem-solving, support reading.

I. INTRODUCTION

Reading is an essential skill for everyone. Through reading, we not only gain knowledge but also learn new information. Reading provides opportunities for readers to learn many mechanisms of language such as vocabulary, grammar, punctuation and sentence construction as well as how to write paragraphs and texts. Readers can improve their reading skills when they are aware of their reading strategies. Pressley and Afflerbach [1] defined efficient readers as strategic readers who are conscious of their reading materials and able to demonstrate good reading strategies in order to comprehend the text. On the other hand, Grabe [2] argued that reading should have a purpose, should be interactive, comprehensive and flexible while developing gradually because reading not only involves motivation, but also provide an interaction with the readers' background knowledge and the information in the printed text. In order to read effectively, readers must have some sort of expectation in order to understand what he/she is reading. Readers must believe that fluency does not happen all of a sudden, because fluent reading is achieved from continuous effort and gradual improvement through the employment of various strategies. Good readers must also have the ability to comprehend, evaluate and synthesize a text while reading other sources. Baker and Brown [3], Shmais [4] and Cubukcu [5] agreed that good readers in L1 (first

language) and L2 (second language) are good thinkers who can function spontaneously in recognizing problems and adopt diverse reading strategies to predict new information while reading. However, many readers tend to apply less effective strategies and do not monitor activities while reading academic texts.

Anderson [6] stated that metacognition combines a variety of thinking and reflective processes. The metacognition strategies can be classified into five primary components: 1) preparing and planning for learning, 2) selecting and using learning strategies, 3) monitoring strategy use, 4) orchestrating various strategies, and 5) evaluating strategy use and learning. According to O'Malley and Chamot [7], metacognitive strategies involves both knowledge about learning known as metacognitive knowledge and control or regulation of learning which is recognized as metacognitive strategies. Metacognitive knowledge refers to knowledge of one's own cognitive processes and those of others whereas learning regulation involves the use of metacognitive strategies. Slavin [8] stated that metacognitive learning strategies are used by students to assess their own understanding, figure out how much time they will need to learn, choose and evaluate effective plans. Likewise, Brown [9] asserted that metacognitive reading strategies consist of checking the possible outcomes of any attempt to solve a problem, monitoring the effectiveness of any attempted action, and testing, revising, plus reviewing strategies for learning. A study by Sheorey and Mokhtari [10] showed that successful readers have a higher metacognitive awareness as compared to less successful readers. Thus, metacognitive reading strategies help students to monitor or regulate their thoughts and can be used either deliberately or automatically [11]. Wenden [12] asserted that students' metacognitive awareness played a part in the effective learning, while Magno [13] believed that the use of metacognitive reading strategies leads to a profound learning experience and improved performance. Hence, L2 readers are encouraged to use metacognitive reading strategies to improve their reading skills in order to enable the effective and efficient employment of reading strategies.

Consequently, this study focuses on the metacognitive reading strategies used by Mokhtari and Reichard [14] when reading academic texts. These strategies are subdivided into three categories; Global Reading Strategies, Problem-solving Reading Strategies and Support Reading Strategies. Many researchers of metacognitive reading strategies such as Snow, Burns, and Griffin [15], Pressley and Afflerbach [1], Paris and Winograd [16], Baker and Brown [3] and Flavell, [17], presumed that skilled reading is interrelated with the readers' metacognition. Readers who have high awareness of metacognitive reading strategies are recognized as skilled

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readers. Therefore, this study was conducted to determine the reading strategies employed by Universiti Teknologi Malaysia undergraduates' while reading academic texts to determine whether they are categorized as a successful readers or unsuccessful readers.

II. METHODOLOGY

A. Instrument, Sample, Analysis

In this study a set of questionnaire was used to assess metacognitive awareness and the perceived use of reading strategies while reading academic texts which was adapted from the Metacognitive Awareness of Reading Strategies Inventory [MARS-I-4]. The respondents of this study were 54 undergraduates pursuing Bachelor of Engineering (Mechanical) degree in Universiti Teknologi Malaysia, Skudai. The questionnaire consisted of 30 items with 3 strategy subscales, global reading strategies (13 items), problem-solving reading strategies (8 items) and support reading strategies (9 items) as seen in Table I. A 5-point Likert scale was used with a scale of 1 - *I never or almost never do this*, 2 - *I do this only occasionally*, 3 - *I sometimes do this*, 4 - *I usually do this* and 5 - *I always or almost always do this*. The data were analyzed using the Statistical Package for Social Science (SPSS) 20 to find the mean and create categories of three frequency levels, low, moderate and high. High frequency indicated a high level of reading strategies and low frequency showed a low level of reading strategies.

TABLE I: DISTRIBUTIONS OF METACOGNITIVE READING STRATEGIES ITEMS

Metacognitive Reading Strategies	Item	Total
Global (GLOB)	S1,S3,S4,S7,S10,S14, S17,S19, S22, S23,S25,S26,S29	13
Problem-solving (PROB)	S8,S11,S13,S16,S18,S 21, S27,S30	8
Support (SUP)	S2,S5,S6,S9,S12,S15, S20,S24, S28	9

TABLE II: LEVEL OF READING STRATEGIES

Categories/ Level	Mean Score
Low	1.00 – 2.49
Moderate	2.50-3.49
High	3.50-5.00

III. RESULTS

TABLE III: FREQUENCY AND LEVEL OF GLOBAL READING STRATEGIES

Global Reading Strategy			
Categories	Levels	Frequency	Percent (%)
Low	2.49- 3.50	2	3.7
Moderate	2.50-3.49	27	50.0
High	3.50-5.00	25	46.3
Total		54	100.0

TABLE IV: FREQUENCY AND LEVEL OF PROBLEM-SOLVING READING STRATEGIES

Problem-solving Reading Strategy			
Categories	Level	Frequency	Percent (%)
Low	2.49 or lower	1	1.9
Moderate	2.50-3.49	13	24.1
High	3.50 or above	40	74.1
Total		54	100.0

TABLE V: FREQUENCY AND LEVEL OF SUPPORT READING STRATEGIES

Support Reading Strategies			
Categories	Levels	Frequency	Percent (%)
Low	2.49 or lower	4	7.4
Moderate	2.50-3.49	28	51.9
High	3.50 or above	22	40.7
Total		54	100.0

TABLE VI: OVERALL USE OF READING STRATEGIES

Strategies	No of students	Minimum	Maximum	Mean	Standard Deviation
Global Reading Strategies	54	1.69	4.46	3.48	0.55
Problem-solving Reading Strategies	54	2.38	4.63	3.69	0.50
Support Reading Strategies	54	2.00	4.56	3.41	0.54
Overall Reading Strategies	54	2.10	4.51	3.53	0.46

TABLE VII: OVERALL FREQUENCY AND LEVEL OF READING STRATEGIES

Usage	Global RS	Problem-solving RS	Support RS	Overall RS
High	25(46.3%)	40 (74.1%)	22(40.7%)	26(48.1%)
Moderate	27(50.0%)	13(24.1%)	28(51.9%)	25(46.3%)
Low	2(3.7%)	1(1.9%)	4(7.4%)	3(5.6%)
Total	54(100%)	54(100%)	54(100%)	54(100%)

IV. DISCUSSION

A. Reading Strategies While Reading Academic Text

The findings, indicate that undergraduate students in UTM have a high use of problem-solving reading strategies with $m=3.69$ which was higher than the rate for global reading strategies ($m=3.48$) and support reading strategies ($m=3.41$) as seen in Table VI. This finding is similar to Tengku Nor Rizan and Nooreiny [18], Alhaqhani and Riazi [19], Abdul Rahim *et al.* [20], Karbalaeei [21] and M6nos [22] that showed that problem-solving reading strategies had the highest mean scores followed by global and support reading strategies. *Adjusting reading speed when the text becomes difficult* and *Pause and think about the text* were reported to be the most common strategies used by the students. This indicated that students were most likely to use problem-solving strategies to solve reading comprehension problems when the text is difficult. *Read slowly but carefully for better understanding* and *Pause and think about the text* were the most common strategies employed by the students when reading academic text in this study. Support reading strategies were the least frequent used strategies with the lowest mean of 3.41 (Refer to Table VI) and this is in line with the findings of M6nos [22]. This shows that students in UTM did not value the basic support mechanisms that aid comprehension to the extent that they are needed. Strategies such as *going back and forth in the text* and *underline or circle information in text for better understanding* were two common support strategies applied by all students in the study. This shows that students were using support mechanisms to help them find the main ideas of the text and to better understand the text whereas *paraphrasing for better understanding* or *summarizing the*

text was the least common support strategies used by students. The findings showed that students were not able to use complex strategies such as paraphrasing or summarizing which requires good reading skills, thus they decided to utilize these strategies less frequently.

These findings demonstrate that undergraduate students in UTM are aware of how to apply metacognitive reading strategies when reading academic texts and this is supported by research such as Block [23] and Sheorey and Mokhtari [10]. O'Malley and Chamot [7] stated that metacognitive strategies are strategies which involve knowledge and learning control through planning, monitoring and evaluating learning activity. Correspondingly, Anderson [24] mentioned that second language students gained considerable success in all academic areas by improving reading comprehension. From this study, it is discovered that undergraduate students in UTM are able to plan, monitor and evaluate their learning activities by employing the appropriate metacognitive reading strategies whenever appropriate. As stated by Scarcella and Oxford [25], students employ learning strategies to improve their education. Oxford [26] asserted that metacognitive strategies which are indirect learning strategies help provide ways of regulating, coordinating, arranging, planning and evaluating learning. UTM undergraduate students select the appropriate metacognitive reading strategies when they are reading academic texts to understand the texts better. This shows that they already have metacognitive awareness as they are conscious of their actions and know what should be done when they face problems in reading academic texts. When students' consciously choose strategies that suit their learning, these strategies become a useful toolkit for active, conscious, and undergraduates are also ESL readers, these findings can be related to Sheorey and Mokhtari [10] who stated that non-native or ESL readers frequently adopt reading strategies appropriate to their situation or task. Similarly, Grabe [2] believed that readers must have some sort of expectation in order to understand what he/she is reading and to employ various strategies to read effectively. When reading academic texts, UTM undergraduates set their objectives and identify the level of difficulty of the text so that they are able to select suitable reading strategies that match the texts difficulty. Difficult and complex texts require undergraduates to utilize additional strategies. This could be the reason for the high frequency of problem-solving strategies used by UTM undergraduates compared to both global and support reading strategies. Problem-solving strategies were the most frequently used strategies by undergraduates because they found these strategies useful for helping them to understand the text.

V. CONCLUSION

The objectives of the study were to investigate the metacognitive reading strategies used by undergraduate students while reading academic texts. The findings show that when students have difficulties in comprehending academic texts they tend to use more problem-solving reading strategies than global or support reading strategies. The findings indicated that students are not focusing on knowing the most effective strategies, but rather on how to use strategies

effectively and appropriately. Therefore, they were able to identify suitable metacognitive reading strategies that should be employed on different types of academic texts because they were able to apply the accurate strategy when they find the text becoming difficult.

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