KEEPING MY BRAIN ON READING: ASSESSING META-COGNITIVE READING STRATEGY AWARENESS OF ESL LEARNERS

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Abstract

The current burden of university students nowadays is to read a large volume of academic texts in English. However, many of them are under prepared for the reading demands placed on them (Dreyer & Nel, 2003). For students whose exposure to English is quite limited, reading becomes one of the most crucial problems during learning. Majority of them show inability to read selectively, they often present low level of reading strategy knowledge and lack the strategies needed to successfully comprehend expository texts (Dreyer, 1998; Van Wyk, 2001) As a result, they might dwell in their inappropriate reading habits without knowing how to read effectively. Research shows that there is a positive relationship between students' meta-cognitive awareness of reading processes and their ability to read and excel academically (Alderson 1984; Carrell 1991; Chan 2003; Mokhtari & Sheorey 2002; Singhal 2001).This study examined the level of meta-cognitive reading awareness of ESL learners in a public university and investigated the type of strategy used by them while reading. Apparently, this study bears crucial pedagogical implications in the teaching of reading for ESL learners.

Keywords: reading ability, reading strategies, meta-cognitive awareness, English as second language (ESL)

Introduction

University education requires students to read a large volume of academic texts in English. University students need to be proficient readers in the era of globalization to acquire knowledge in all courses taken at the university level. Hence, comprehending academic texts is an essential skill that university students need to acquire (Levine, Feren-ze, & Reves, 2000). However, many new university students are not prepared to meet academic reading demands that are placed for them (Dreyer & Nel, 2003). As a result, they use inappropriate reading skills without knowing how to read effectively.

Reading skills are important in academic contexts which have caused language researchers to investigate on ways to increase students' reading proficiency. Recent studies in reading comprehension focus on the role of meta-cognitive awareness of one's motivational and cognitive processes while reading (Pressley & Afflerbach, 1995; Guthrie & Wigfield, 1999; Alexander & Jetton, 2000; Pressley, 2000). Meta-cognitive processes play a crucial part in achieving comprehension (Phan, 2006). Many studies have illustrated the positive relationships between students' meta-cognitive awareness of reading strategy used and their ability to read and excel academically (Mokhtari & Sheorey 2002; Singhal 2001; Wenden, 2001; Chamot, 2005; Zhang & Seepho, 2013).

Meta-cognitive strategies include readers' self-awareness of readers' comprehension of their reading, their evaluation of cognitive demands of reading tasks, and their choice of specific cognitive reading strategies based on text difficulty, situational constraints and the readers' own cognitive abilities (Baker & Brown, 1984; Gourgey,2001; Hamdan et al, 2010; Zhang & Seepho, 2013). Having awareness and monitoring of one's comprehension processes are critically important aspects of skilled reading. Meta-cognition encompasses of the knowledge of the readers' cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension.

According to Anderson (2002), learners who have meta-cognitive awareness have strategies to overcome reading problems. Furthermore, Feryal (2008) pointed out that students with meta-cognitive readers are strategic and autonomous readers. The present study provides us with in-depth insights of the complexity of the reading process and the solutions to develop reading competence.

Metacognitive Reading strategies in ESL/EFL context

Many studies have investigated reading strategies and reading processes among learners with various levels of proficiency, cultural contexts and backgrounds (Auerbach and Paxton, 1997; Barnett 1988; Karbalei, 2010; Peng, 2013). Boulware-Gooden et al (2007) examined the success of the instruction of meta-cognitive strategies in improving vocabulary and comprehension of third-grade students. Comprehension gains were found to be greater in the intervention school (20%) compared to the comparison school. Both groups read the same expository text, answered many of the same questions, and were engaged in the same

introductory activities, which included meta-cognitive strategies such as understanding the purpose for reading and activating background knowledge.

A research conducted by Karbalei (2010) revealed that both EFL and ESL readers have a similar pattern of strategy awareness while reading academic texts although the two student groups had different socio-cultural backgrounds. One hundred and ninety undergraduate students (96 Iranians and 93 Indians) were involved in a test to evaluate their meta-cognitive awareness of reading strategies. All of them were tested on their reading comprehension. The Indian students had more awareness and used global support and total meta-cognitive reading strategies. There was no significant difference in using problem-solving reading strategies among the Iranian students. These findings show some of the differences and similarities between EFL and ESL readers by employing meta-cognitive strategies in both contexts.

On the other hand, a study conducted by Magogwe (2013) revealed English as Second Language (ESL) students in University of Botswana reported high reading proficiency and high use of meta-cognitive strategies, but there was no vast difference in terms of proficiency. Data collected through The Survey of Reading Strategies Questionnaire (SORS) developed by Mokhtari and Sheorey (2002), indicated that high proficiency students had an advantage over low proficiency students in terms of their management and monitoring of reading processes.

Another study by Zhang & Seepho (2013), investigated meta-cognitive strategies of English major students in academic reading at Guizhou University in China indicated similar findings. A meta-cognitive Strategy Questionnaire (MSQ) was distributed to 33 third-year English major undergraduates who enrolled in "Advanced English Course" at Guizhou University in southwest China. The results suggested that there was a significant positive correlation between meta-cognitive strategy use and English reading achievement.

In a similar vein of study, Peng (2013) examined the level of reading strategy utilized by students in reading English academic texts. The study also investigated if there were any significant differences between Malaysian and Chinese students in terms of meta-cognitive awareness and perceived use of meta-cognitive reading strategies among TESL students in the University of Malaya . A total of 55 second year and third year TESL students (31 Malaysian and 24 China Chinese) in the University of Malaya (UM), Kuala Lumpur, Malaysia completed 30-item questionnaires adopted from a Survey of Reading Strategies (SORS) questionnaire. The result indicated all students used a high level of reading strategy using meta-cognitive reading strategies. Visualizing strategy was the most popular item that students "looked at the title before reading to get a hint about text content". T-test result showed that there were significant differences in the use of the two categories of strategies; global and problem-solving strategies. Malaysian students demonstrated higher level of using global and problem-solving strategies compared to their China counterparts.

From the review of literature above, it could be seen that researchers have examined differences in the use of reading strategies of native and non-native English speakers when reading academic materials with different contexts. The research literature on meta-cognitive awareness of reading strategies indicates the need to increase our understanding of readers'

meta-cognitive knowledge about reading and reading strategies so that individuals develop into active, constructively responsive readers.

Aims

Bearing in mind all the positive effects highlighted in the existing literature, the present paper is aimed at increasing our understanding of readers' meta-cognitive knowledge about reading and reading strategies in the context of ESL learners. Thus, the present study aimed at assessing the meta-cognitive awareness and perceived strategy use of ESL learners who are native speakers of Malay/ Bahasa Melayu and read academic texts written in English. Specifically, the current study will explore the following issues:

1. ESL Malay learners' reported reading strategy awareness
2. ESL Malay learners' reported reading strategy usage
3. Differences, if any, in strategy usage by language proficiency level

In light of exploring the aforementioned issues, this study intends to seek answers to the following research questions:

1. What is the ESL learners' level of meta-cognitive reading strategies awareness ?

2. Which meta-cognitive reading strategies do ESL learners use most/ least in their reading processes of academic texts?

3. Is there a difference in meta-cognitive awareness of reading strategies used by Intermediate and elementary proficiency learners respectively?

Methodology

Participants
Two groups of diploma-level Malay ESL learners (20 in each group) (N=40), participated in this study. Both groups enrolled in compulsory language proficiency courses offered by the public university. The first group consisted of twenty students was in Elementary level and the other group was Intermediate group.

Instrument
This study utilized a quantitative data collected through the use of the Meta-cognitive Awareness of Reading Strategies Inventory (MARSI) by Mokhtari & Reichard, 2002) which was designed to assess adult readers' meta-cognitive awareness and perceived use of reading strategies while reading academic or school-related materials. The MARSI instrument measures

three broad categories of strategies: Global Reading Strategies (GLOB), Problem Solving Strategies (PROB) and Support Reading Strategies (SUPP). The questionnaire has 30 items, consisted of 13 items of GLOB which form, 8 items of PROB and 9 items of SUPP. The participants were required to answer the questionnaire by rating the frequency they thought they had employed the strategy while reading the text on a 5-point Likert type scale from 'never true of me' to 'always true of me'.

Results and Discussion

The results obtained are presented in the form of tables pertaining to the following research questions:

Q1: What is the ESL learners' level of meta-cognitive reading strategies awareness ?

To answer this question, the students' scores were interpreted descriptively based on Oxford (1990) interpretation schemes. Based on this, the individual-level and group-level scores on the use of meta-cognitive strategies ranging from 1 and 5 – fell into three levels: high (mean of 3.5 or higher), moderate (mean of 2.5 to 3.4), and low (2.4 or lower).

Table 1: *Overall average used of meta- cognitive reading strategies of ESL learners.*

Strategy type	Mean	Average used
Global reading strategies	3.36	Moderate
Problem solving strategies	**3.89**	**High**
Support reading strategies	3.48	Moderate
Overall reading strategies	**3.58**	**High**

Key to averages: 3.5 or higher =HIGH,   2.5 - 3.4 = MODERATE,   2.4 or lower= LOW

The overall average indicated how often an individual student used all the 30 meta cognitive strategies while reading. In general, the results of the study indicated that the average for individual strategy items ranged from 4.60 to 2.55 which fall into high and moderate level. The following table described the level of meta-cognitive reading strategies awareness of ESL learners in the present study.

Table 1 shows a relatively high overall usage (*mean =**3.58***) of meta-cognitive reading strategies among students.   The study revealed that students were highly aware of meta-cognitive

strategies while dealing with their reading tasks. Overall, 95% of the learners reported high to moderate meta-cognitive reading strategy use (65% high and 30% moderate) and only 5% demonstrates low use of the strategy. Problem solving strategy (PROB) was reported to be the most preferred strategy used by learners in the present study, followed by support reading strategies (SUP) and global reading strategy (GLOB). Both Support and Global Reading strategies were moderately being used by the ESL learners in this study. The study's results were consistent with the findings of other studies conducted in this area (Kudeir et al, 2012; Al-Dawaideh & Al-Saadi, 2013; M. Magogwe, 2013).

Table 2*: Problem Solving strategies.*

Strategy	Problem solving	M	SD
PROB 1	Reading slowly and carefully	4.10	.84
PROB 2	Trying to stay focused on reading	4.00	.71
PROB 3	Adjusting reading rate	3.67	1.07
PROB 4	Paying close attention to reading	4.07	.91
PROB 5	Pausing and thinking about reading	3.60	1.00
PROB 6	Visualizing information read	3.57	1.05
PROB 7	**Re-reading for better understanding**	**4.22**	**.94**
PROB 8	Guessing meaning of unknown words	3.80	0.79

In view of the problem solving reading strategies, the ESL learners reported high usage of all strategies (*refer Table 2*). They are claimed to have no problems with solving reading difficulties. They indicated that when the text is difficult, they re-read it for better understanding (PROB 7, M= 4.22), slowly and carefully tried to understand the text, (PROB 1, M= 4.10), paid close attention to it (PROB 4, M=4.07), and stay focused on the text (PROB 2, M=4.00) by guessing unfamiliar words(PROB 8, M=3.80), adjusting their reading speed (PROB 3, M=3.67), and visualizing the information(PROB 6, M=3.57).

Considering the Support reading strategies, findings of the study indicated that ESL learners reported high use of SUP 2 (M=3.77), SUP 5 (M= 3.77) and SUP 6 (M=3.70). The following Table 3 shows the overall strategy usage for Support reading strategy subscales. It can be concluded that ESL learners did use supporting strategy such as dictionaries (reference materials) to help them increase their understanding of the text. These learners also aid reading through note-taking, underlining and highlighting textual information, and paraphrasing for better understanding.

Table 3: Support Reading Strategies.

Strategy	Support Reading	M	SD
SUP 1	Taking notes while reading	3.35	.97
SUP 2	**Reading aloud when text becomes hard**	**3.77**	**1.02**
SUP 3	Summarizing text information	3.17	1.00
SUP 4	Discussing reading with others	3.35	1.09
SUP 5	**Underlining information in text**	**3.77**	**.91**
SUP 6	**Using reference materials**	**3.70**	**1.01**
SUP 7	Paraphrasing for better understanding	3.60	1.10
SUP 8	Going back and forth in text	3.22	.86
SUP 9	Asking oneself questions	3.37	1.07

As far as Global Reading strategies are concerned, the results reported high use of personal experiences and background knowledge (GLOB 2, M=3.90) and they also reported to predict and guess the text meaning by linking what they already know about the subject and bringing it into the reading tasks.

Table 4: Global Reading Strategies.

Strategy	Global Reading	M	SD
GLOB 1	Setting purpose for reading	3.55	.90
GLOB 2	**Using prior knowledge**	**3.90**	**.87**
GLOB 3	Previewing text before reading	3.70	1.09
GLOB 4	Checking how text content fits purpose	3.27	1.06
GLOB 5	Skimming to note text characteristics	3.22	1.02
GLOB 6	Determining what to read	3.32	1.09
GLOB 7	Using text features (e.g. tables, charts)	3.52	1.17
GLOB 8	Using context clues	3.00	1.01
GLOB 9	Using typographical aids (e.g. italics)	3.05	1.10
GLOB 10	Critically evaluating what is read	3.22	.76
GLOB 11	Resolving conflicting information	3.65	.80
GLOB 12	**Predicting or guessing text meaning**	**3.90**	**.84**
GLOB 13	Confirming predictions	3.55	.90

Q2. Which meta-cognitive reading strategies do ESL learners use most/ least in their reading processes of academic texts?

The second research question examined the type of meta-cognitive reading strategies frequently used by all learners. This was done by obtaining the averages of each strategy

subscales (Global, Problem Solving and Support Strategies) in the MARSI. The scores for the respective subscales were added up and divided by the numbers of items in each to get the mean frequency. The most and least frequently used meta-cognitive reading strategies reported by both Intermediate and Elementary ESL learners in the study are listed in descending order in *Table 2* below.

The items at the top and bottom respectively show the most and least frequently used strategies respectively. For the Intermediate learners, 25 out of 30 reading strategies (83.33%) show high usage (i.e. mean > 3.5) while the other 5 strategies (16.66%) were used moderately by the students. Whereas for Elementary learners, 13 strategies (43.33%) were considerably high in term of usage range and the other 17 strategies (56.66%), fall under medium usage range (i.e. 2.5-3.4). Apparently, for both Intermediate and Elementary learners, none of the strategies show low usage as reported by the descriptive statistics.

Table 5: The most and least frequently used meta-cognitive reading strategies reported by Intermediate and Elementary ESL Learners.

Name	Strategy	Intermediate (n= 20)		Elementary (n=20)	
		Mean	SD	Mean	SD
GLOB 1	Setting purpose for reading	4.05	.686	3.05	.825
GLOB 2	Using prior knowledge	4.30	.656	3.50	.888
GLOB 3	Previewing text before reading	4.05	.825	3.35	1.22
GLOB 4	Checking how text content fits purpose	3.60	.994	2.95	1.05
GLOB 5	Skimming to note text characteristics	3.50	.945	2.95	1.05
GLOB 6	Determining what to read	3.40	.994	3.25	1.20
GLOB 7	Using text features (e.g. tables, charts)	3.80	1.15	3.25	1.16
GLOB 8	Using context clues	3.40	.820	2.60	1.04
GLOB 9	Using typographical aids (e.g. italics)	3.55	1.09	2.55	.887
GLOB 10	Critically evaluating what is read	3.15	.489	3.30	.978
GLOB 11	Resolving conflicting information	3.75	.786	3.55	.825
GLOB 12	Predicting or guessing text meaning	4.25	.716	3.55	.825
GLOB 13	Confirming predictions	3.80	.695	3.30	1.03
PROB 1	Reading slowly and carefully	4.15	.875	4.05	.825
PROB 2	Trying to stay focused on reading	4.25	.550	3.75	.786
PROB 3	Adjusting reading rate	3.80	1.05	3.55	1.09
PROB 4	Paying close attention to reading	4.35	.745	3.80	1.00
PROB 5	Pausing and thinking about reading	3.80	1.00	3.40	.994
PROB 6	Visualizing information read	3.60	1.09	3.55	1.05
PROB 7	Re-reading for better understanding	4.60	.598	3.85	1.08
PROB 8	Guessing meaning of unknown words	4.05	.825	3.55	.686
SUP 1	Taking notes while reading	3.40	1.04	3.30	.923
SUP 2	Reading aloud when text becomes hard	4.00	.858	3.55	1.14
SUP 3	Summarizing text information	3.60	.820	2.75	1.01
SUP 4	Discussing reading with others	3.40	.882	3.30	1.30
SUP 5	Underlining information in text	3.85	.933	3.70	.923
SUP6	Using reference materials	3.65	.988	3.75	1.06
SUP 7	Paraphrasing for better understanding	3.80	.833	3.40	1.31
SUP 8	Going back and forth in text	3.70	.656	2.75	.786
SUP 9	Asking oneself questions	3.55	.887	3.20	1.23

Name	Strategy			Mean
GLOB	Global Reading Strategies			3.56	3.16
PROB	Problem Solving Strategies			4.10	3.68
SUP	Support Reading Strategies			3.66	3.30
ORS	Overall Reading Strategies			3.81	3.34

Q3: Is there a difference in meta-cognitive awareness of reading strategies used by intermediate and elementary proficiency learners respectively?

Despite of the fact that the two groups of learners in this study are completely different in term of their proficiency levels, they reported strikingly similar patterns of reading strategy awareness and usage while reading academic or college related materials. However, in terms of awareness level, intermediate learners were found to be more aware of the meta-cognitive strategies as compared to those in elementary group. The results indicated that intermediate learners demonstrate high use of meta-cognitive strategies with the overall average of M=3.81 whereas the elementary learners fall under moderate users of the strategies with the overall average of M=3.34. Detailed comparison between the two groups can be seen in *Table 6* below.

Table 6: *Detailed comparison of meta-cognitive reading strategies used by Intermediate and Elementary ESL learner*

Intermediate (n= 20)			Elementary (n=20		
Name	*Strategy*	*Mean*	*Name*	*strategy*	*Mean*
PROB 7	Re-reading for better understanding	4.60	PROB 1	Reading slowly and carefully	4.05
PROB 4	Paying close attention to reading	4.35	PROB 7	Re-reading for better understanding	3.85
GLOB 2	Using prior knowledge	4.30	PROB 4	Paying close attention to reading	3.80
PROB 2	Trying to stay focused on reading	4.25	PROB 2	Trying to stay focused on reading	3.75
GLOB 12	Predicting or guessing text meaning	4.25	SUP6	Using reference materials	3.75
PROB 1	Reading slowly and carefully	4.15	SUP 5	Underlining information in text	3.70
PROB 8	Guessing meaning of unknown words	4.05	GLOB 12	Predicting or guessing text meaning	3.55
GLOB 3	Previewing text before reading	4.05	PROB 8	Guessing meaning of unknown words	3.55
GLOB 1	Setting purpose for reading	4.05	SUP 2	Reading aloud when text becomes hard	3.55
SUP 2	Reading aloud when text becomes hard	4.00	PROB 3	Adjusting reading rate	3.55
SUP 5	Underlining information in text	3.85	GLOB 11	Resolving conflicting information	3.55
SUP 7	Paraphrasing for better understanding	3.80	PROB 6	Visualizing information read	3.55
PROB 5	Pausing and thinking about reading	3.80	GLOB 2	Using prior knowledge	3.50
PROB 3	Adjusting reading rate	3.80			
GLOB 13	Confirming predictions	3.80	SUP 7	Paraphrasing for better understanding	3.40
GLOB 7	Using text features (e.g. tables, charts)	3.80	PROB 5	Pausing and thinking about reading	3.40
GLOB 11	Resolving conflicting information	3.75	GLOB 3	Previewing text before reading	3.35
SUP 8	Going back and forth in text	3.70	GLOB 13	Confirming predictions	3.30
SUP6	Using reference materials	3.65	SUP 4	Discussing reading with others	3.30
SUP 3	Summarizing text information	3.60	SUP 1	Taking notes while reading	3.30
PROB 6	Visualizing information read	3.60	GLOB 10	Critically evaluating what is read	3.30
GLOB 4	Checking how text content fits purpose	3.60	GLOB 7	Using text features (e.g. tables, charts)	3.25

SUP 9	Asking oneself questions	3.55	GLOB 6	Determining what to read	3.25
GLOB 9	Using typographical aids (e.g. italics)	3.55	SUP 9	Asking oneself questions	3.20
GLOB 5	Skimming to note text characteristics	3.50	GLOB 1	Setting purpose for reading	3.05
			GLOB 4	Checking how text content fits purpose	2.95
SUP 4	Discussing reading with others	3.40	GLOB 5	Skimming to note text characteristics	2.95
SUP 1	Taking notes while reading	3.40	SUP 8	Going back and forth in text	2.75
GLOB 8	Using context clues	3.40	SUP 3	Summarizing text information	2.75
GLOB 6	Determining what to read	3.40	GLOB 8	Using context clues	2.60
GLOB 10	Critically evaluating what is read	3.15	GLOB 9	Using typographical aids (e.g. italics)	2.55

Consequently, the findings revealed that both intermediate and elementary ESL learners in the present study are *skilled readers* as they did use a repertoire of meta-cognitive reading strategies in order to comprehend text effectively. However, differences do exist between both groups in terms of strategy usage. Intermediate learners overview text before reading; look for important information while reading and pay greater attention to it; attempt to understand the text as a whole, activate and use prior knowledge to interpret text. Good readers distinguish between important information and details as they read and are able to use in the text to anticipate information and / or relate new information to information already stated. They are also able to notice inconsistencies in a text and employ strategies to make these inconsistencies understandable (Baker & Brown, 1984; Garner, 1980).

This study's findings support those of previous studies done(Paris & Meyers, 1981; Sheorey & Mokhtari, 2001; Zhang, 2001; Magogwe,2013) that advanced or higher reading proficiency level students employ meta-cognitive strategies more frequently than those in the lower levels. Intermediate learners are more aware of problem solving strategies which help them establish an action plan that allows them to utilize effective use of strategies for comprehension. In order to repair their comprehension difficulty, they use repair strategies such as reading slowly and carefully, adjusting their reading rates, and use prior knowledge to increase their understanding.

Conclusion and Pedagogical Implications

On the whole, the data collected through the MARSI survey revealed noteworthy findings. The results of the study showed that high level ESL learners are more aware of meta-cognitive reading strategies compared with low and moderate learners. The findings revealed that the Intermediate ESL learners demonstrated high use of meta-cognitive reading strategies while the Elementary ESL learners showed moderate use of those strategies.

With respect to the use of the three categories of strategies in MARSI (i.e. Global, Problem-Solving and Supportive strategies), both Intermediate and Elementary learners use problem solving strategies more frequently than support and global reading strategies. Despite the high use of the strategies, the findings clearly showed that the Intermediate and Elementary students, both have similarities and differences in using meta-cognitive strategies. It was therefore recommended that students should be guided in using various meta-cognitive reading

strategies in enhancing comprehension and teachers should be trained through workshops on how to use meta-cognitive strategies to help their students

Overall, however, the results of this study should be treated with caution as it is limited to the students' perception of strategy they use than their actual use of reading strategies. Future studies should assess meta-cognitive reading strategy awareness with a new or larger sample size and should use a more reliable instrument that can really provide in-depth understanding of meta-cognitive processes in the ESL classrooms.

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