

The Employment of Metacognitive Strategies to Comprehend Texts Among Pre-University Students in Brunei Darussalam

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Abstract

When reading, students often face problems in understanding a particular text that they have read. The harder the text, the harder it will be for them to understand the text. They would often use various strategies that match with what they think the needs of the text that they have read would be. Therefore, this descriptive study is intended to identify the use of metacognitive strategies in pre-university students' reading. A questionnaire based on the Reading Comprehension Inventory Strategy was used to collect the data. In order to obtain the research data, a total of 53 pre-university students in Brunei Darussalam were selected as the research sample. The research findings showed that the respondents often would often use reading strategies such as making marks, checking, seeking help, and writing a summary. The practice of using metacognitive strategies among the research sample when they came across the problem of understanding a text, showed that they would be more focussed on strategies that involve the use of thinking skills. The findings also showed the employment of different strategy preferences in understanding texts.

Key words: metacognitive strategies, reading comprehension, pre-university student

Background

Reading is a network of learning and it is suitable for the needs to form an informative society. Reading ability will help students to improve their knowledge more effectively. In the context of learning in higher learning institutions, students' reading process is not only for the purpose of understanding text literally but also to come up with inferences (Yahya Othman, 2010a). Readers read for the purpose of understanding the text content. In the context of understanding, reading is associated with the constructive form, writing, and involvement, and is based on situation processes. The purpose of reading among upper secondary students involves the process of reading which requires a lot of construction or meaning making based on the text that has been read. Readers have to construct or reconstruct in terms of understanding, which is sometimes seen from different perspectives.

When referring to the metacognitive strategies during the reading process, hence for the purpose of understanding the content of a text, readers have to perform construction in terms of awareness and control (Kuhn, 2000). Kuhn also stated the purpose of enhancing understanding among more mature readers as they need to know the function of remembering and how knowledge can be related to the capacity to remember. It is also undeniable that the need and control of awareness on text content requires further analysis. Metacognition is a concept that refers to various epistemological processes. Metacognition is defined as cognition about cognition. It refers to the second level of cognition. Thinking about thinking refers to thinking, knowledge about knowledge and reflection about actions (Louca, 2003).

If cognition involves detection, understanding, memory and so on, then metacognition involves someone's thoughts on detection, understanding, memory and others. Diversity of cognition related to cognition can be labelled as meta-perception, meta-understanding, meta-memory, with metacognition remaining as the superordinate term. Apart from that, metacognitive is related to one's thinking regarding a particular matter. The discussions of a person's way of thinking on the subject of thinking have started way back since the years of Plato and Aristotle.

Louca (2003) added that if cognition is associated with perceptions, understanding, remembrance and others, meta cognition on the other hand involves thoughts about perceptions, understanding, remembrance and others that a person owned. Various cognition about cognition can be labelled as metaperception, metaunderstanding and metamemory with metacognition remains as in the superordinate term.

Reading is a complex process which lay emphasis on cognitive approaches. Basically, reading needs paradigm changes from the traditional behaviorism approach towards reading and readers with vision based on cognitive psychology. For instance, when reading a Malay text, readers are required to use their cognitive ability in order to understand the text constructively (Yahya Othman, 2009). Therefore, reading in a broader context is not only referring to the process of stating word by word about what is written in the text but also drawing meanings out of the text. The selection of a suitable strategy is required for those who are engaged in reading more challenging texts. Besides that, in order to obtain more effective reading effects, matured readers will always work towards understanding the content of texts intensively by conducting an analysis on the content whereby the requirements of their assignments are referred. In the context of learning in higher learning institutions, students' reading process is not only for the purpose of understanding texts literally but it is beyond that. Readers need to explicitly understand and analyse the content of texts deeply (Yahya Othman, 2010a; Yahya Othman & Ghazali Mustapha, 2010b).

In the context of the Malay Language education in Brunei Darussalam, the mastery of reading skill is considered important. This is because in the Malay Language syllabus, students are required to master the skill. The content of the syllabus stated that reading and understanding are important skills for one's language command. Reading skill needs to be mastered and placed in the same position as other skills such as listening, speaking and writing.

Statements of problems

At the secondary level, there are certain students who are able to read fluently but do not understand the text that they have read and the meaning that it conveys. Usually, they will read and continue to read until the last sentence without understanding the text. This condition continues until a stage where the students do not know and do not realise their weaknesses. The weaknesses comprise awareness aspects such as not being able to detect their own reading, reading without any control and not being aware of what they understand and vice versa.

Besides that, there are students who do not use appropriate reading strategies when reading certain texts. Consequently, they are not able to fully understand the text that they have read. In addition, by just reading once, one definitely could not grasp the meaning that the author is trying to convey. Students are supposed to know the significance of using appropriate strategies when reading.

Besides that, the text prepared by the teacher is beyond the students' ability and interest to understand. If the materials that have been prepared are too difficult, the students would feel disappointed and would not want to continue reading. In contrast, if the materials are too easy, they might probably feel bored as the materials provided by the teacher are not challenging enough. Hence, before the teacher prepares reading materials, it would be better if the teacher could somehow learn about the students' reading materials preferences.

Research Questions

For the purpose of obtaining the answers to the research objectives stated above, the following are the research questions, which are the key questions to this study.

- (i) What is the metacognitive strategies that the research sample used when reading?
- (ii) What is the method used by the research sample if they encounter reading problems?
- (iii) What is the research sample's level of preferences related to the reading strategy?

Methodology

Research Design

This research used qualitative method. The method is suitable to be used for a research that intends to make consistent of its process. According to Creswell (2005), qualitative research method will help researchers to understand research problems more deeply.

Population and Sampling

The research population was pre-university from Maktab Duli Pengiran Muda Al-Muhtadee Billah, Negara Brunei Darussalam. The researcher selected 53 twelfth year students as the research sample by simple random sampling since they were a group of mature students who would use certain strategies when reading and understanding academic texts.

Research Instrument

In order to collect data, the researcher developed three sets of instrument consisting of two sets of comprehension test and a set of Reading Comprehension Strategy checklist survey.

Reading Text

The researcher prepared two sets of reading comprehension texts. One of it was a factual form of text entitled 'Muzik Sarana Bahasa dan Komunikasi' by Amir Husairi Sharif. This text was adapted and modified from Dewan Bahasa magazine (2008). This text consisted of three pages, 10 paragraphs and 603 words. Another reading text was from a story entitled 'Makhluk Asing' by Nasran Sira Rahim. The text was taken and adapted from Misteri Dunia magazine (2008). The text consisted of 3 pages, nine paragraphs and 684 words. The text was selected because the research sample was used to being exposed to such text type. In terms of the validity of the text content, the researcher referred to Standard 12 Malay Language teachers to ensure that the content was suitable for the students' level.

Questionnaire

The questionnaire was based on the Reading Comprehension Inventory Strategy constructed by Yahya Othman (2010a). The researcher, however, made some modifications in terms of the sentence structures to enhance the understanding of the research sample. The questionnaire was divided into three sections, namely, Section A, Section B and Section C. Section A consisted of a list of reading strategies that the research sample would use when reading. Section B was a list of practices that the research sample would use when they faced problems to understand a text. Section C on the other hand consisted of the research sample's level of preferences on a few statements related to reading strategies. The research sample was required to select their level of preferences through the provided answer options. The selection was based on the Likert scale; 1 for extremely disagree (STS), 2 for disagree (TS), 3 for not sure (TP), 4 for agree (S), and 5 for extremely agree (SS).

Research Procedure

The research sample was gathered in a classroom. Before the reading session was conducted, the researcher provided a briefing for all the students on the research procedures. They were requested to quietly read two articles that had been prepared. After the reading session, they were required to complete the questionnaire.

Data Analysis

The collected data were analysed using the SPSS software and the findings were stated in mean and standard deviation forms.

Findings

Strategies Used by the Research Sample when Reading

There were 11 options of reading strategies used by the research sample when reading as listed in the questionnaire (Table 1). The findings showed that the marking strategy using a highlighter was the most often used strategy by the respondents ($M=4.45$, $SP=.70$). This shows that the practice of using the highlighter was well-liked and easy to use when reading. Besides that, during reading, checking was found to be the second most often used strategy by the research sample ($M=4.26$; $SP=.74$). Other reading strategies that were often used when reading were asking for help strategy ($M=4.15$; $SP=.74$), underlining strategy ($M=4.15$; $SP=.74$), writing a quick note strategy ($M=4.09$; $SP=.86$) and defining words in which the meanings are unknown ($M=4.04$; $SP=.88$).

Apart from that, the sample also chose reading strategies such as drawing a mind map ($M=3.83$; $SP=.94$), using experiences to understand a text ($M=3.49$; $SP=.87$), summarising ($M=3.26$; $SP=.96$) and constructing questions ($M=3.13$; $SP=.88$). The strategies of leaving the reading ($M=2.68$; $SP=1.22$) and glancing through ($M=2.68$; $SP=1.22$) were the least used strategies.

The findings showed that the strategies used by the current research sample focussed more on marking activities, checking, seeking help, writing a summary and providing definitions.

Most of the strategies were categorised as novice reader in order to understand the text content. The respondents were seen to give less focus on strategies that have more cognitive strength such as using mind maps, summarising and constructing questions. These strategies require more capacity in terms of reasoning with regards to the table of contents. In a fast reading context, the sample was not quite inclined to use a strategy such as skimming.

Table 1: Strategies used when reading

	Mean	Standard Deviation
Marking using highlighter	4.45	.70
Checking	4.26	.74
Asking teacher's assistance	4.15	.72
Underline	4.15	.74
Writing short note	4.09	.86
Provide definitions for unknown words	4.04	.88
Drawing mind map	3.83	.94
Using experiences to understand text content	3.49	.87
Summarising	3.26	.96
Construct questions regarding the text	3.13	.88
Leave the reading if it is difficult to be understood	2.75	1.14
Reading in a glance	2.68	1.22

N=53

Practices that are carried out when one encounters understanding problems

Readers would tend to face problems in understanding a text that they have read. Various strategies can be utilised to overcome problems that one faces. In this study, from the questionnaire, 12 practices that were often employed by readers when they encountered understanding problems, are listed in Table 2. The findings showed that the respondents extremely agreed to use the strategy of underlining when reading ($M=4.32$; $SP=.83$). The respondents also extremely agreed to read the text more than once ($M=4.26$; $SP=.86$) when facing understanding problems. Other practices that were used by the respondents included finding important information in every text ($M=4.06$; $SP=.66$), linking important contents to understand the text ($M=4.04$; $SP=.65$) and writing notes ($M=4.00$; $SP=.96$). On the other hand, at the moderate level, among the strategies that were often used by the research sample were – trying to imagine the description of the text in mind in order to ease memory ($M=3.96$; $SP=.90$), paying attention to important information compared to minor ones ($M=3.87$; $SP=.96$), and when reading, revising questions that have been constructed based on the text content ($M=3.57$; $SP=.57$).

Other practices that were prevalent among the research sample at the moderate level were applying experiences to understand the text ($M=3.43$; $SP=.84$) and using subject knowledge to construct relevant questions related to the text ($M=3.40$; $SP=.93$). Whereas the strategy that was least applied by the research sample was skimming a text quickly before reading ($M= 2.96$; $SP=1.06$). Based on the findings, strategies that were often employed by the respondents focussed more on those with emerging characteristics such as underlining when reading and reading more than once. Other practices such as looking for important facts, linking important points and writing notes were also considered as strategies that highlighted more on emphasizing content confirmation that could be found in the text.

Other than that, there were practices that involved high cognitive ability such as making presumptions, mapping out comparison, and monitoring based on questions that have been constructed. For reading by skimming, the research sample received a few practice sessions of applying it as a key strategy in reading comprehension.

Table 2: Practices when one encounters understanding problems

	Mean	Standard Deviation
Underline when reading to remember	4.32	.83
Reading the text more than once	4.26	.86
Search for important information in each text	4.06	.66
Linking important points to understand a text	4.04	.65
I write down notes while reading	4.00	.96
Try to imagine description of text in mind to ease memory	3.96	.90
Pay attention to important information compared to minor ones	3.87	.96
If the information is not clear, I will make assumptions	3.68	1.00
I will revise the questions that I construct according to the content of the text while reading	3.57	.82
Using experiences to understand a text	3.43	.84
Using the knowledge of a particular subject to construct questions related to the text	3.40	.93
Skim a text quickly before reading	2.96	1.06

N=53

Respondents' Level of Preference on Reading Strategies

Strategy 1: If students do not understand the meaning of a word

Based on the findings (Table 3), the proposed reading strategies comprised using surrounding words/as if the meanings are the same to find out the meaning (M=4.17; SP=.80), using outside resources such as referring to a dictionary or experts (M=4.15; SP=.99), leaving the word for a while and waiting for further explanation (M=3.34; SP=1.22), and pronouncing the word (M=3.11; SP= 1.10). The findings showed that the respondents used the skill of using words that have the same meaning to know the meaning of those difficult words besides referring to a dictionary or asking those who know better. In addition, the respondents were uncertain whether leaving difficult words and pronouncing those words could help to solve the problems of finding the meaning of difficult words. Therefore, based on the findings, when dealing with problems of not knowing the meaning of words that had been read and not knowing the significance of the words, the research sample agreed to use words with analogous meaning and suitable references.

Table 3: Strategy proposal when not understanding the meaning of a word

	Mean	Standard deviation
Use surrounding words/ as if with the same meaning to find out the meaning of the word.		
To use outside resources such as the dictionary or experts		
Leave the word for a while and wait for further explanation		
ounce the word		

Strategy 2: If students do not understand the meaning of the overall sentence

Based on the research findings (Table 4), respondents who did not understand the meaning of the overall sentence stated that they agreed to choose the strategy of reading the sentence again (M=4.64; SP=.59). For the strategy of thinking of a different sentence (M=3.38; SP=1.02) and reading aloud all the difficult words (1.22), the respondents stated that they were uncertain of the suitability of the proposal.

Whereas for the suggestion of leaving the whole sentence (M=2.15; SP=1.11), the sample stated that they did not agree to it. As such, based on the findings, if the research sample did not understand the whole sentence that they had read then they should read the sentence where the meaning was obscured.

Table 4: If students do not understand the meaning of the overall sentence

	Mean	Standard Deviation
Read the sentence again		
Read a different sentence		
Repeat loud all difficult words		
Read the whole sentence		

Strategy 3: Plan to increase reading comprehension

Based on the findings (Table 5), the research sample stated uncertainty with the proposal given; thinking about what is known (M=3.87; SP=.85), thinking of the purpose of reading (M=3.84; SP=.80), reading quickly (M=3.45; SP=1.01) and having no specific planning (M=3.38; SP=1.13). Hence, readers should think about matters that are related to the subject that they are reading and think of the purpose of reading to enhance the mastery of reading comprehension.

Table 5: Plan to increase reading comprehension

	Mean	Standard Deviation
To think of what is known		
To think of the purpose of reading		
Read quickly		
No specific planning		

Strategy 4: In dealing with a text that is confusing compared to simply skipping the reading activity.

Based on the findings (Table 6), the research sample agreed to continue reading; continue reading and repeat (M=4.32; SP=.87) and continue reading until they complete the text (M=4.23; SP=.89). Besides that, the mean for the respondents who chose the strategy of skipping confusing parts is 2.55 with SD=1.03. Therefore, continue reading strategy is considered suitable when dealing with confusing texts compared to leaving the reading activity.

Table 6: Dealing with confusing texts

	Mean	Standard Deviation
Continue reading and repeat		
Continue reading until complete		
Skip particular part		

Strategy 5: Inability in understanding a particular sentence.

Based on the findings (Table 7), the respondents stated their uncertainty with the suggested strategy when dealing with the situation of not understanding certain sentences when reading. Among the proposed strategy included taking time to find the meaning (M=3.70; SP=1.06) and having perhaps two similar sentences (M=3.58; SP=.84). In addition, for the strategy proposal of being unable to channel ideas (M=3.42; SP=.84) and unable to relate (M=3.40 ; SP=.69), the respondents also stated that they were uncertain. Therefore, the findings showed that the research sample was not confident with the suggestions given.

Table 7: Inability in understanding a sentence in reading

	Mean	Standard Deviation
Take time to find the meaning		
Have perhaps two same sentences		
Be unable to channel ideas		
Be unable to relate		

Summary and Discussion

Strategies used in reading

The findings showed that the strategies used by the research sample when reading focussed more on marking activities, checking, seeking help, writing summaries and providing definitions. Most of the strategies are with beginning characteristic in order to understand the text content. Respondents were seen to give less attention to strategies that are based on cognitive strengths such as using mind maps, summarising, and constructing questions. These strategies need more capacity in terms of reasoning of the table of contents that they have read. On the other hand, the research sample was not quite inclined in using a strategy such as skimming in fast-reading contexts.

The use of strategies, which are considered suitable for readers relies heavily on some factors. One of the factors is the readability level of a text. A text that is quite difficult to be understood often distracts the readers' understanding process. They have to focus more on several other aspects, which involve the present knowledge of the readers on the text that is being read, vocabulary and sentence structures present in the text. Hence, for the factual text used by the research sample, it was easier for them to use strategies such as marking, checking, asking for assistance, formulating and defining. These strategies were considered to be easier and were able to help the respondents to refer to the text if they wanted to obtain information.

Meanwhile, the research sample used less of the strategies that involved the notion of cognition. There were a small number of respondents who agreed to use strategies that involved cognitive applications such as mind mapping, formulating and constructing questions. For students who were studying at the pre-university level, they were actually exposed to effective reading strategies especially the ones that involve higher level thinking instrumentation. The problems that cause them to be in such a condition are influenced by text factor that is used and students' capability to make analyses and exploration on the text content that is used. In this matter, readers can also acquire the meaning of the text reflectively by using past knowledge, interests and purpose of reading (McKeown & Gentilucci, 2007). In the context of this study, the application of the mental model involves meaning representation from the text that has been read. The building of this model is associated with the readers' capability in assisting knowledge structures that integrate materials verbally and visually. When reading, readers will use the mental model constructively so that they can relate text structures with the text contents (Wooley, 2010). Therefore, readers who are more mature would use the mental model often to obtain better understanding of the text when reading.

Strategies that are used when one comes across reading problems

Based on the findings, the research sample was often seen to focus on strategies such as underlining when reading and reading more than once. Other different practices such as looking for important points, linking important points and writing notes were also considered as strategies that emphasize more on the content confirmation found in the text. As for practices that involve high cognitive ability such as making presumptions, mapping out comparison and monitoring based on the constructed questions. For reading practice by skimming, the research sample was still seen to practise less of skimming, as a key strategy during reading comprehension.

As discussed earlier, the strategies that were often used by the research sample when reading were underlining and reading more than once. This strategy can be associated with the basis of getting information contained in the text. Hence as mentioned by Wooley (2010), the mastery of the strategies used is frequently associated with the students' capability in using any of the strategies that are deemed appropriate. If they feel the existence of the need to use certain strategies hence the need will encourage them to do so. The research sample will not use strategies that are considered not related to the text and are difficult to be carried out. For example reading with skimming strategy is not being used so often because the research sample can read easy texts.

The research sample's level of preferences on the proposed reading strategies

The respondents' preferences are listed based on the items developed. Preferences is listed based on the highest mean achieved of a problem that has been proposed.

Among the research sample's preferences are with regards to dealing with problems of not knowing the meaning of the words read. The sample agreed to use words that are analogous in terms of the meaning and make suitable references. The sample also seemed to use the strategy of continuing reading that is considered suitable when dealing with confusing texts compared to simply leaving the reading activity. If the readers do not understand the overall sentence that they read, they should read the sentence with a complex meaning. Readers should think of issues related to the subject that they are reading and also the purpose of reading to enhance the mastery of reading comprehension. The findings also pointed out that the research sample was not confident with the proposal given. The strategy of continuing reading is considered suitable when dealing with confusing texts compared to simply leaving the reading activity.

Suggestions and Conclusion

Based on the findings and analysis of the study, some suggestions can be made to enhance the quality of student's understanding. Students as readers are a very important factor to be given attention as during schooling they need to go through the reading process for the purpose of gaining knowledge and information. Hence the mastery of a suitable reading strategy to be used is very much influenced by the student's capability. The first element that needs to be owned by students is hindsight or background knowledge. For the purpose of owning that experience, the teacher or lecturer needs to know the way information is processed through the information processing model. This model explains how information is processed and kept

The research sample's level of preferences is related to the reading strategies that have been suggested. Classroom discussion is also able to give impact on reading understanding by providing students with the opportunity to analyse, make reflection and think critically. The given space can help students to read intensively by making an organised preparation before discussing. Besides that, the use of lesson media is also able to enhance students' understanding on text that they read. This can be done by using technology application for example by using video to further augment understanding of the issue that has been discussed in the text that is read. Through this method, readers can expose with the context that exists in the text more constructively and effectively (Lei et al., 2010).

Besides the strategies discussed above, Lei *et al.*, (2010) also suggested a few strategies that are considered to be suitable to be conducted during comprehension learning such as the use of SQ3R strategy, peer group teaching, encoding and flexibility learning. The readers are also able to increase their quality of understanding by using strategy which suits their abilities (Yahya Othman, 2009). The choice of strategy will help readers to plan and evaluate the progress of their reading. Even though the strategies which involve metacognitive are seen to be more suitable for matured readers, however exposure at the lower level can be done to enable students to explore the content of the texts more effectively.

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