Comprehension Process in Metacognitive Perspective Among University Students

Yahya Othman & Ghazali Mustapha

ABSTRACT: *Reading process requires readers to think deeply on the aspects that they have read in order to achieve an effective understanding. The readers need to figure out whether they understand the content that they have read. The ability to comprehend reading text would be the major aim in reading process. For students at tertiary levels, this ability is strongly associated to one's field of study. From the stand point of critical and creative thinking skills, especially from the metacognitive aspect, students have different perspective of comprehension. This study is conducted to examine the process opted by Malaysian university students in comprehending text using a qualitative research method. A total of eight respondents following the bachelor in education programme participated in this study. Data was obtained via interviews, document analysis, and classroom observation. The findings indicate that there is a different perspective amongst students with regards to the use of metacognitive in understanding the text. These differences were influenced by the strategies used, the level of text difficulty, types of text and students' perception of the text read.*
KEY WORDS: *comprehend reading text, metacognitive aspect, Malaysian university students, and different perspectives.*

Introduction

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. In order to achieve the objective, readers are required not only to understand a text explicitly but also to analyze the meanings of the text deeply (Walker, 2000).

Reading is not only referred to the ability to state words verbally from the content of the text but also the ability of meaning making through text inference and text interpretation. Hence, P.D. Pearson added that the reading process is related to the comprehension revolution. As for the purpose of achieving the objective, reading needs paradigm changes from the traditional reading perceptions based

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on behaviorism towards a more comprehensive reading which lays emphasis on cognitive process (Pearson, 1985).

Along with that the reading process lays emphasis on the need to master certain information which can be gained from the texts to comprehend with the final objective. In order to understand the texts well, readers need to have adequate knowledge stored in their long term memory which will be organized through information processing (Woolfolk, 2004). Other than that, matured readers are more capable of meaning making where this factor also influences their understandings (Dagostino & Carifio, 1994). This is because the meaning making ability in comprehension is often being related to cognitive aspects that generally involved readers' ability to control reading process.

Metacognitive in Reading

The theoretical and experimental discussion on metacognitive are a popular theme in researches in which it is related to reading since two decades ago (Flavell, 1976; Brown, 1985; Garner, 1987; and Larson, Britt & Larson, 2004). The concept of "metacognitive" is seen to be vague and difficult to be interpreted (Flavell, 1981; and Berkowitz & Cicchelli, 2004). Generally, metacognitive can be explained by asking questions in regards to the purpose of revealing the intended subjects such as: "*What are the steps that you think will assist in finding the causes of the process?*"; "*How do you differentiate the first and the second paragraph?*"; "*Why do you use the reading method?*"; and "*Are you satisfied with the answers gained?*" (Devine, 1993; and Boulware-Gooden *et al.*, 2007).

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. With regard to that, J.H. Flavell has introduced a thinking concept or the notion of controlling the way of thinking and the reading process. J.H. Flavell then broaden this aspect by coming up with a metamemory theory to explain children's language development and an application strategy to recall again. In this relationship, students are found to have failed to apply the recalling information again strategy since there are lack of awareness in the efforts to form an effective recalling again process (Flavell, 1976).

The terminology for the concept of metacognitive has been long known and used even though the term is still new. Researchers have realized that reading involves the act of planning, examining, and evaluating related to the metacognitive skills (Houtveen & Grift, 2007). Lately, there is a research related to the metacognitive knowledge and its relations in regard to the reading behaviorism which focused on three important variables such as personal, task, and strategy (Carreker, 2004).

Generally, the metacognitive concept was produced based on an information processing theory. According to Richard C. Anderson, in the information processing theory, the function of metacognitive which is to gain accessed information will

be more meaningful when readers are aware that the information gaining process is taking place. When reading, readers are up to the process of identifying and interpreting information systematically by using familiar procedures (Anderson, 1991). The use of metacognitive could help readers to build cognitive controlling process model with functional strategy in solving problems (Woolfolk, 2004).

Statement of Problem, Research Objective and Research Question

Reading comprehension is the core towards a reader's achievement to explore knowledge contain in a particular text. The lack of mastery in term of the concept and comprehension process when reading is among the problems frequently faced by readers. This is because the readers often make assumptions that reading is an automatic process where comprehension will occur one way or the other at the same time during reading (Peverly, Brobst & Morris, 2002).

As for students in universities, the problem with the strategy to comprehend texts, especially texts which are out of the students' scope of studies, have often distract their comprehension competency. Other than that, students often do not use a good comprehension strategy when reading academic texts. This leads to the readers of not being dynamic in exploring the content of the texts more comprehensively.

The objective of this research is to analyze reading comprehension process in term of metacognitive perspective among university students. And the research question is how do the readers use the metacognitive strategy in the process of text comprehension?

Research Methodology

This study uses a qualitative approach with the interview and observation method followed by journal writing. The justification of using this approach is based on its suitability with the research questions and objectives. The research on students' reading practices and processes need to be explained based on various factual accounts in real-life.

The research respondents consist of 8 Malay students from the Faculty of Educational Studies UPM (University of Putra Malaysia) in Serdang, Selangor Darul Ehsan, Malaysia. They are pursuing their Bachelor in Education (Teaching Malay Language as the First Language) to become qualified teachers. They are given names as R1, R2, R3, R4, R5, R6, R7 and R8.

The researchers arrange two texts to be read by the research respondents. The first text entitled "Malays Self Dignity in the New Millennium" is written by Hassan Ahmad. The seven-pages text consists of 28 paragraphs with 1,584 words. This text is based on the researcher's speech which is delivered to university students and is published in *Utusan Malaysia* daily dated 24.8.2003. The second text is with the title "Free Trading or Trading Protection?" written by Wong Hock Tsen. The text has

been printed in the magazine of *Dewan Ekonomi* which is published by Dewan Bahasa dan Pustaka in July 2003. The text consists of 8 paragraphs with 641 words.

The data obtained are analyzed based on the interview transcriptions which are categorized according to the aspects related to the metacognitive strategy as practiced by the respondents. The researchers also interpret data through observations and inspections of the responds from the journal reading documents. Data are also analyzed through a triangulation process by taking into account data from the interviews, observations and journal writing.

Findings and Discussions:

Based on the research findings, the researchers discusse metacognitive strategy used by the respondents when reading texts.

A. Metacognitive Strategy in Text Comprehension

The act of planning, observation and evaluation are among the strategies practiced by the respondents when reading. Respondents provide justifications for each of the strategies that they have used which they considered are suitable for themselves. The statements given by the respondents during the interviews provided various pictures of their application of the strategies when they are reading the texts during that moment. Therefore, factors such as text types, interests, ability to interpret the content of the text a well as the respondents' schemata have been identified. Based on the findings from the respondents during the interviews, the researchers have categorized the metacognitive strategy. The metacognitive strategy which is used by the respondents could be divided into categories as suggested by B.K. Beyer (1987) and R.L. Oxford (1990) in Ghazali Mustapha (1998) which is presented in the table below.

The stages of reading strategies implementation could be divided into three categories such as planning, observation and reading evaluation. This research will further discuss the findings related to the implementation of the strategy.

First, **Planning Before Reading**. The planning which is to be made before reading takes place influenced the readers' text comprehension. Self-consciousness is referred to the different levels of the respondents towards their reading purposes, ability to understand based on their strengths, weaknesses, existing knowledge and interests. The involved research respondents are conscious whether the content of the texts which have been read are related to his/her interest and liking or vice versa. Other than that, the respondents also make some adjustments in term of the content of a text which has been read in order for an understanding to exist between the respondents' and their ability to comprehend the text. The discussions on the research findings which are related to self-consciousness involved the purpose of reading, planning the reading process, self ability and existing knowledge.
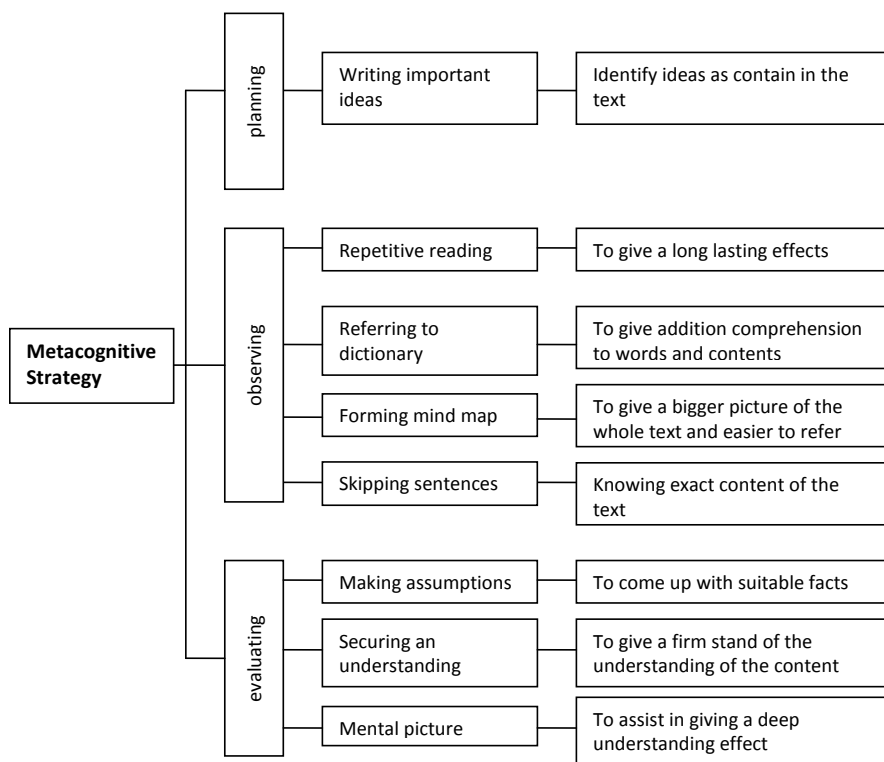
Table 1: Metacognitive Strategy in Reading Process Based on Categories by Beyer (1982) and Oxford (1990).

Table 1:
Planning Self-Consciousness

Self-consciousness	Research findings
The purpose of reading	Lecturer asks us to refer to related books, journals and other materials. Lecturer wants to make the task more academic […]. I'm aware of the importance to understand the texts (R1).
	I will write down what I need from the text. Usually I will only make simple notes (R2).
Awareness of text	I will form questions such as what it means by self-dignity, globalisations etc. Those questions will assist me (R5).

The research respondent (R1) is aware of the importance for readers to have clear reading purposes in order to have the process of reading to proceed effectively. A planned reading process could leave positive impacts towards the comprehension quality. The research findings showed that the research respondent could clearly state the purpose of reading (R2). The planning strategy for reading materials which are suitable to meet students' self needs is vital to ensure comprehension of the readings could be well mastered by the students. In regard to this, before starting

to read, R2 sets up a specific objective. The act of planning has been done in order that the readings could assist him to understand difficult texts easily. This is where R2 tends to be careful when approaches a text which is difficult to understand. It has been seen as a need to plan beforehand the reading comprehension. The notion of writing down important ideas is among the meta-cognition strategies which has been used in planning to read.

Second, **Writing Down Important Ideas**. This strategy has been widely used by readers of academic texts which leave an impact on comprehension. In order to choose important ideas from a text, readers are required to approach the text attentively and to be able to form a schema in the long term memory. Therefore, the respondents' strengths to identify the importance of writing down points showed that they realized that sentences choosen with cognition strengths would assist readers to understand a text better. For instance, the respondents think of the significant to write down important ideas from a text to help enhance their understandings.

> I realized that important points need to be prepared earlier (R2).
> Important points can help to form a comprehension's framework (R4).

Third, **Observation When Reading**. The research findings showed that the respondents' awareness to observe a text when reading is based on a text awareness task. When it comes to the awareness to observe a text, it is related to the readers' ability to identify and understand vocabulary and spelling which have been used in the text. In regard to this, the involved research respondents realized the needs to understand vocabulary and spelling in the text.

The vocabulary in a text which has been read, functions as a medium to explain the content of the text (Carreker, 2004). The difficult vocabulary especially borrowing words which are difficult to be understood have caused the research respondents to realize the difficulties to understand the text well. Based on the readings of both texts, the involved research respondents stated that it is quite difficult to understand the second text as the vocabulary used refer to economic terms. The instances of the findings related to text consciousness are as mentioned below.

> I don't really understand what it means by globalization (R5).
> I know the word as I have heard of it before but I don't know how to explain it (R6).
> Can understand in term of words. But new words that I have just heard of are difficult to understand especially the borrowing words (R7).

The respondents also realized that the aspects of text observations could leave deeper impacts towards the quality of reading comprehension. The observations during reading make a reader's role more challenging as he or she needs to function as a good observant to determine how far the reading which has been done is in the right track. This means that readers should be aware that the reading process which they have gone through could assist them to identify the meanings of a text apart from giving suitable clues if the readers could not master the text well

(Kobayashi, 2002). Hence, M. Kobayashi emphasizes on the importance of text readers to prepare themselves with the exact answers when they are face to face with the questions. Therefore, in order to ensure controlled understandings, readers need to observe their readings.

The observation during reading is not only referred to the way of gaining information from the content but it would also inform on whether the reading done could leave impacts in term of the cognitive aspects. During the observations when readers are reading, the readers need to be efficient in term of adjusting the text difficulty level and the length of the text content with their own reading experiences which they have been gained during schooling days (Francine, 2002). This is because observation when reading will become more effective if readers could make the text that they have studied to be as suitable as the text given. As in the content of this research, the research respondents are not prepared with the needs for academic literacy which have been accepted and this leaves an impact towards the study.

Most readers are not well prepared to be qualified as to master the academic literature which is the basic criteria in writing project papers at the university level (Berkowitz & Cicchelli, 2004). According to both of them, readers need to be exposed to suitable strategy which could assist them to master learning well. Therefore, a more comprehensive role should be played by the school management to teach generic skills in order to ensure that there is a continuation which exists in term of the mastery and usage of learning skills.

The research findings stated that the strategies used by the respondents to observe reading can be categorized into: (1) repetitive reading, (2) referring to dictionary, (3) doing mind map, and (4) skipping sentences.

First, **On the Repetitive Reading**. The repetitive reading strategy has been practiced by the involved research respondents in order to understand texts which have been read as mentioned below:

> Repeat, […] means by repeating which could enhance understanding (R1).
> If we repeat or reread it […] I think I could understand what it means (R6).
> This one […] err […] but less […] err […] not familiar […] have to read few times to get what it means (R4).
> But in lindungan trading, there are things that I could not understand. So it leaves an impact on my reading. I have to repeat back phrases which contain the difficult words (R8).

Repetitive reading is applied by the research respondents to improve their understandings when they approach the content of the texts which they considered to be difficult. The research respondents read sentences which consisted of difficult words few times but still could not understand the words as they have never heard of the words before or that the words have not been explained in the sentences (R4, R5, and R8). The difficulty to understand a text which involved terms and concepts required them to relate the terms and concepts to previous knowledge.

Students at the university level are still required to practice repetitive reading especially when they realized that it is difficult to understand a particular text that

they have read. The research findings showed that the repetitive reading technique is suitable to be implemented in order to support understandings. R.J. Marzano *et al*. (1998) stated that the strength of readers' understandings could be seen in term of how the process has been controlled by involving knowledge mastery and self-management. The awareness to master the content of academic texts and ability to control the process could influence readers' understandings especially in using the repetitive technique.

Second, **On the Referring to Dictionary**. The researchers also classified the act of referring to dictionary as a metacognitive strategy used by the research respondents. They stated that:

> I often need to refer to the dictionary (R4).
> I will have to refer to the dictionary or ask friends. Sometimes even the friend does not understand. But the first text is longer and more difficult (R3).

According to the researchers' observations, there are a few of the research respondents used the dictionary to find the meanings of difficult words. The observation showed that R2, R5, and R7 used dictionary to refer to the meaning of words that they could understand. Based on the responds of journal reading, the research respondents (R1, R4, R7, and R8) have mentioned that using the dictionary is the most suitable strategy for them to understand difficult texts.

J.E. Ormrod (1995) stated than an effective learning such as reading requires a high consciousness towards the learning difficulties. If one comes across difficult terms, he or she needs to have an awareness to understand those texts even if it will take time to understand those difficult words in the texts.

Third, **On Doing Mind Map**. The research respondents emphasized on the use of mind map to strengthen the understanding of the texts. Most of the research respondents (R1, R2, R3, and R5) admitted the efficient of mind map. The use of mind map provides a picture of an active reading and encourage critical thinking. When readers come across various kinds of information in the texts, they have to state their overall understanding out of it again and the best way to do this is by sketching out a mind map.

> Mind map helps me to understand the entire text easily (R3).
> Even though it is difficult, but mind map could assist me to get the overall picture (R2).

Fourth, **On the Skipping Sentences**. The respondents are aware of the importance of the skip sentences strategy to be applied in the text which is difficult to be understood (R3, R4, R5, R6, and R7). It can be seen that not all the sentences in the text which they have read could be understood especially if there are difficult terms or newly found concepts. In certain conditions, respondents will not skip reading if the text which they are reading is in the factual form because they simply worried that it will decrease their mastery of making out the meaning of the text. The research findings below showed respondents' awareness towards the metacognitive strategy of sentences skipping.

> If I don't skip […] the more I wouldn't understand. There are many other points left (R7).
> If it's poem, I will ignore it. I don't understand the meaning even more. I can't skip when I'm reading fast. It depends also on the text that I'm reading. If the text is difficult to understand, I have to focus on more than an aspect (R3).
> I don't skip difficult sentences (R5).
> I seldom skip sentences. But if it's difficult maybe […] (R6).
> It depends on the situation, like if I read to answer questions […] or if it's compulsory [...] I wouldn't skip […] (R4).

However, there is a research respondent (R3) who stated that skipping sentences does not help him or her to increase the understanding. The respondent feels that the strategy could distract students' overall understanding.

> […] for instance the text about trading just now. There are terms that I could not understand. After reading it many times, I just skip it. It's okay if I don't understand. It could distract our understanding (R3).

The strategy that has been used still relates readers' metacognitive awareness to interpret difficult words in text which they could not understand. This situation is similar with the research conducted by V.M. McLain, B.E. Gridley and D. McIntosh (1991) which explain on the word comprehension for texts consisted of antonym, synonym and analogy. The mastery of the aspects could help readers to enhance their comprehension.

B. Reading Evaluation

The research respondents also evaluated the understanding level of awareness task towards the text that one has read. In order to evaluate the awareness task, it involves tasks and instructions which are required to be followed by readers when reading. The awareness assists the respondents to understand the text which they have read. The table below shows examples of awareness task as represented by the research respondents.

Table 2:
Evaluating Awareness Task

Awareness Task	Research findings
Set up objective	I think it does not need specific objective, if those academic materials […] we have to be conscious of what we are trying to understand (R5).
	So maybe I can get to know the objectives based on current issues [...] set up what we are searching from this text (R8).
Need to understand	Because if you don't read […] how to answer exam questions (R8).
	We supposed to know what it means by malar trading. Here it explains, err […] free trading, it is okay as we know, as we are familiar to it (R7).

The findings above showed that there are awareness towards the tasks when one approaches the texts. This showed that the respondents take into account aspects that are needed to be mentioned so that they could enhance their understandings. In regard to this, for R5, he does not have to set up a clear objective before reading and is aware of the objective of reading the text indirectly. This showed that there are needs for the respondents to think the objectives of their reading comprehension.

The questions which will arise at this stage are the way readers measure their success of reading comprehension. Readers will also get engaged in the evaluation aspect which is the main element to implement the metacognitive strategy (Carroll, 2000). In order to evaluate, readers need the evaluation tools which are to be used to ensure whether the texts provide benefits or vice versa. As for the purpose of determining evaluation, comprehension can be done in written form or verbally. In this research, the respondents stated that when they are reading, they could also evaluate the text which they have read.

The metacognition strategy which involved the aspect of evaluation when reading includes: (1) making assumptions, (2) securing an understanding, and (3) mental picture.

First, **Making Assumptions**. Other than that, the research respondents also apply a metacognitive strategy when reading texts by making assumptions on the texts that they have read. This way enables the respondents to make the nearest meaning assumptions based on the difficulties of the texts. Most of the respondents made assumptions when reading a narrative text which give them the opportunity to assume the ending of the text.

> When I read a novel, I will assume the ending of the story (R3).
> I will assume the examples when reading a story (R8).
> If I read a novel, I will always think of the ending of the story […] what's the ending (R4).

Second, **Securing an Understanding**. Other than that, the assumptions strategy has also been used by the respondents to understand factual type of texts. However, the respondents stated that it is difficult to make assumptions for technical factual texts such as the second text.

> In this passage, it looks as if it has been explained but the focus is broad. I make assumptions of the focus myself (R5).
> I will pay attention to what I understood so that it could be useful when I'm sitting for the exam (R6).

Readers are trying to secure the content of the texts in their long term memory by obtaining the mastery the content of the texts as the main objective. This is as followed by the information processing theory which emphasized on the importance of the efforts to remember the content of the texts which one has read (Woolfolk, 2004). Generally, readers of academic texts will work to secure their text comprehension for the purpose of performing tasks and examinations.

Third, **Mental Picture**. The reflection done by readers when reading will provide necessary help to enhance their understandings. For instances, the findings of the interviews by R1 and R4 as follows:

> I imagine the economic factor in the text could help to boost small industries (R1).
> When reading, I will think of the effects faced by Malays to improve themselves (R4).

When reading a concept which is difficult to be understood, readers use their mental strength to imagine the meaning of the text. For instance, respondents imagine the type of society which will be formed when have a high self-dignity (R2, R3, and R5). In regard to this, readers are required to set up the meaning of the texts into their minds. Readers are also needed to be competent to imagine their comprehension by forming relationships between meanings and knowledge. Along with that, M. Larson, A. Britt and A. Larson (2004) emphasized the effects of reading texts and the ability to make objections towards the content of the texts which are not suitable with the texts that they have read. An efficient reader will be able to state the differences in term of meaning which exist between prior knowledge and the content of the text which he or she has read.

Implications

The researchers agree mostly that a person's awareness and observation towards the level of understanding is an important aspect in reading skills (Pressley & Afferbach, 1993; Pressley *et al.,* 1995; and Mokhtari & Reichard, 2002). By using B.K. Beyer (1987) and R.L. Oxford's (1990) framework, the researchers summarize that the research focus into three stages for the implementation of the reading strategies such as thye act of planning, observation and evaluation. The stages involve statements of metacognitive awareness that lay emphasis on the strategy which is used when reading.

The readers prepared themselves by planning their reading so that the information that they are searching for are more accessible. The readers are free to carry out their reading process by focusing on the objectives that they have set up for themselves. A proper planning before reading could provide a better platform to understand a text which is to be read. The plan to read academic texts required the use of metacognitive strategy which could decrease the lack of understanding when one approaches reading comprehension. It stated that good readers should plan their reading in relation to the schemata (Mokhtari & Reichard, 2002).

Research respondents stated that planning is suitable to be done if the text that has been read is from literature genre that involves many narrative elements. As been stated by J.B. Walker that the planning of reading should involves the needs to analyze title, subtitle, the picture of the whole text, suitability of text organization as well as evaluation that could be carried out towards text (Walker, 2000).

The research respondents also realized that text observation could leave deeper impacts towards the reading process. By observing the reading process, it makes

the readers' task more challenging as they need to see themselves as excellent observers in order to determine how far the reading done are in the right track (Kobayashi, 2002). This means that the readers need to be aware of the reading process that they are going through to help them to understand the meaning of the text apart from the text giving suitable clues for the readers if they could not master the text well.

The questions that arouse at this stage are on how readers measured the success of their reading comprehension. Readers will also use the evaluation aspect which is an important element to implement the metacognitive strategy. In term of the psychological perspective, Carroll stated that readers could evaluate their reading based on the exposure given when one is to teach reading (Carroll, 2000). A continuous exposure could assist readers to enhance their ability to understand academic texts. Other than that, the evaluation of comprehension could also be carried out in the written form or verbally especially when the skills are required to be taught formally in the classroom.

Conclusion

Reading process requires readers to think deeply on the aspects that they have read in order to achieve an effective understanding. The readers need to figure out whether they understand the content that they have read. This refers to the metacognition strategy awareness created by the readers in their efforts to understand a particular text. The readers are also able to increase their quality of understanding by using strategy which suits their abilities. 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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