

Critical Reading Skills at Tertiary Level

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ABSTRACT

This study investigated critical reading skills among tertiary level students. Ten undergraduate students from the Faculty of Science, Universiti Teknologi Malaysia (UTM) participated in this research. They were required to read a text regarding an oil crisis and respond to a question given in a form of a written protocol. A Critical Reading Categorization Scheme, adapted from the strategy profile developed by Sugirin's (1999) was used to analyse the written protocol data. It was found that a number of sub-skills were used by the students, among them which were consistently used include extracting information from reading text, using examples to support argument, stating opinion regarding the topic discussed, stating personal viewpoint on the issue discussed and providing explanations for opinion stated. Overall, the results showed that the students were able to moderately respond critically to the text they read

Keywords: Critical reading skills and reasoning

INTRODUCTION

Reading generally refers to the activity of understanding the meaning of written or printed words or symbols. Although reading has always been known as passive or receptive process, it is also viewed as an active cognitive process (Alderson, 2000). As readers move to a higher level of reading, there is the need to develop critical reading skills which enable them to evaluate an article's worth in terms of its "accuracy, fairness, relevance and significance" (Spears, 1999: 249). Taylor (1994: 43) describes critical reading as a process of reader's "tasting, swallowing and then digesting" the ideas presented in the text. These illustrate the process of understanding, interpreting, synthesizing and analyzing the information read from the passage. Furthermore, the ability to relate new ideas presented in the reading text with pre-existing knowledge is also crucial in critical reading. Active interaction between a reader and the content facilitates the construction of underlying meaning based on author's thoughts written either directly or indirectly in the text. It allows readers to bridge the content presented with their prior knowledge or schemata.

Critical reading does not only demand a higher level of reading skill (Gaith, 2003), it also requires readers to analyze and argue about the topic of the text. Although many people may take reading skill for granted, readers especially professionals and college or university students are expected to

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read critically in order to comprehend, extract and evaluate ideas in reading materials (Crismore, 2000).

In examining critical reading, sub-skills which are embedded in the skills of critical reading, such as making critical response and using reasoning are being used by readers. It is the process or action that readers engaged in to show how they react to the reading materials. The sub-skills used in the critical reading process will also reveal readers' ability or skill to read critically (Sugirin, 1999). This research, therefore, aims to examine crucial skills of reading that tertiary level students are expected to master, that is, giving critical response while reading a text.

Research Objectives & Research Question

This research seeks to achieve the following objective, that is, to investigate reader's ability in responding critically to the text issue. It attempts to address the following research question.

- What are the sub-skills of critical reading employed by tertiary level readers when reading a text?

Skills of Critical Reading

In order to be a competent critical reader, it is important for a reader to put more efforts in mastering the skills of critical reading. Taylor (1994: 32) holds the view that critical reading is "rooted and interrelated with understanding of critical thinking". This is because readers need to judge and interpret the content of text critically and analytically while reading a text. Hence, critical thinking skills like analyzing facts, reasoning, analyzing arguments and making inferences are among the main components in critical reading (Moon, 2008).

According to Wallace, (1992: 29) readers can choose to progress "within the text itself and those external to it". Readers are said to work with the text when they interact directly with it. However, when they evaluate, judge, summarize or react to the text, they are said to work from the text. Based on Wallace's (1992) view, there are other skills of critical reading which require readers to work from the text. This means critical readers utilized the information provided in the passage to help them react critically and analytically towards the text.

Analyzing Facts

In this modern age, we are surrounded and fed with all sorts of information and reading materials, ranging from magazines and newspapers to academically written textbook and journals. All these reading sources, either electronic or printed materials may not necessarily provide readers with the most updated and accurate information especially when they lack "editorial scrutiny" (Spears, 1999: 250). So, the skill of analyzing facts is vital as it enables readers to differentiate relevant and updated information from the irrelevant and inaccurate one. Activation of previous experiences and pre-existing knowledge helps readers to identify the accurate, pertinent and reliable information and reading sources (Koda, 2004; Halpen, 2007).

Also, facts are said to be unchangeable and may be “verifiable pieces of information” (McWhorter, 2004: 91). However, in reading text where perceptions of authors may vary from one another, only ideas that are proven accurate and supported with evidence are accepted as facts. Viewpoints that are regarded as facts should also be agreeable by other scholars in the field.

According to Ruggerio (2001:58), many people believe that “their right to hold an opinion is a guarantee of the opinion’s rightness”. This can be misleading especially in a situation where there are insufficient support to verify the ideas mooted. Critical readers should judge the facts and opinions given, evaluate their accuracy and assess author’s credibility in producing the article or text to ascertain that they are provided with correct information regarding the issue discussed (Perkins and Murphy, 2006).

Critical readers also need to compare and evaluate the content presented through reasoning, comparison with pre-existing knowledge and looking for evidence that will prove the validity of information presented (Fairbairn and Winch, 1991). Therefore, it is crucial for readers, especially professionals and students to critically analyze information given in reading materials extensively before regarding the information as facts.

Reasoning

Reasoning is also one of the skills of critical reading. The two most common types of reasoning discussed by researchers include deductive and inductive reasoning. Deductive reasoning is a process whereby ideas are given from general to specific. In terms of critical reading, critical readers are expected to judge and analyze carefully concepts, ideas and principles given in a passage before making a logical and reasonable conclusion. On the other hand, inductive reasoning is a way of thinking whereby conclusion is made based on adequate evidence (Taylor, 1994). Inductive reasoning is helpful for critical readers to form reasonable generalization or hypothesis when diverse information and facts are given in the text. Reasoning is the basic element of arguments (Fairbairn and Winch, 1991) and thus, important in critical reading as it provides evidence and support to strengthen an assertion made. The skill of reasoning is needed not only by book authors when producing a piece of writing, but also readers who need to evaluate ideas and information presented in the texts. In short, it is used to reinforce readers’ arguments over data in the reading materials.

Reasoning is an element that is related to the skills studied in this research. The process of giving critical response involves reasoning and argument. In order to respond critically to reading materials, one needs to evaluate opinions and facts in the reading texts critically. Critical readers have the tendency to employ their reasoning skill to support the statements or arguments formed towards the contents of a passage. They also have the ability to identify and evaluate the reliability of the reasons, arguments or supporting details given by text writers in supporting their statements. Although deductive and inductive reasoning seem to be two opposite skills, both are important in critical reading as they assist readers to interact with the text, and thus, readers can make generalization and conclusion critically based on the content presented.

Analyzing Arguments

Before making any argument, critical readers should analyze the topic discussed and identify the arguments in a reading passage. This can be done easily based on three crucial constituents of an argument in critical reading given by McWhorter (2004). Firstly, an argument ought to be dealing with an issue. Next, it should have its own position or claim over the matter. Lastly, the claim must be supported by logical reasons and verification to convince others that it should be accepted. However, refutation may exist in certain cases, whereby it takes opposing perspectives into consideration.

According to Alderson (2000: 181), "... readers are also expected to be critical in the reading: to detect assumption, philosophies, theories or prejudices implicit in text, and to relate any account of their readings to their perceptions of such hidden matters". Analyzing argument may involve identifying assumptions in argument which might be included consciously or unconsciously in the text. When an assumption is consciously incorporated in the argument of the text, it can be a point of critical analysis and discussion by the readers, normally to identify the content worthiness, the depth of the argument and linguistic style used to project the argument. In contrast, when an assumption is unconsciously incorporated into the text, it can become delicate for the readers to pinpoint the claim that the author is trying to make. A critical reader, thus, would be able to detect prejudices in implicit assumptions. Some arguments may require readers to identify the stance taken by the author, and whether or not they agree with the stance.

Analysing argument may involve the skills of evaluating it via the evidence post in the text. Evidence refers to data and proof used to strengthen and verify arguments. However, several types of information used to support arguments such as personal experience and perception (McWhorter, 2004) may not be suitable to serve as evidence due to the fact that they may be idiosyncratic in nature. Hence, by evaluating justification based on its "fairness, sufficiency and relevance" (Spears, 1999: 274), proficient readers will be able to examine the relevance and truthfulness of evidence employed in supporting arguments.

Critical Reading at Tertiary Level

Critical reading is a vital skill that should be instilled and taught to students during their schooling process. Furthermore, it has always been said as one of the aims and outcomes of education especially at higher level (Perkins and Murphy, 2006). It is the cognitive ability that is expected to be possessed by every student in tertiary level. This is because students' ability to read critically enables them to judge and evaluate reading materials made available to them especially in terms of the author's credibility and also the ideas and facts presented in the text. Despite this, it is revealed that many students reach tertiary level of education without having experienced the learning process that encourages or requires them to read or think critically (Crismore, 2000). In Malaysian context, students are said to be lacking critical reading skills and consequently, this means that the skills of critical reading should be incorporated into the education system. Zuhana, Wong and Shameem's (2014:43) study on critical reading among tertiary students indicates that "the students lacked the required critical skills, in particular, when they are required to identify the writer's purpose and the

main idea in the text which support the observation and experience of many Malaysian educators and researchers. This has direct implications on reading development in Malaysia”.

Since critical reading can be taught and trained (Halpern, 2007), it is essential to teach critical reading skills to students at every level of education process. This is to ensure that the new generation is equipped with the necessary skills that will assist them in the reading process.

METHODOLOGY

Subjects of Study

The subjects for this study comprise undergraduate students of Universiti Teknologi Malaysia (UTM), who were enrolled in an English language course. Ten students participated in the study in which they were required to produce a written protocol in response to a reading text. All the respondents were final year students of the Faculty of Science in UTM.

Instruments

Written Protocol

The primary data for this study was the written protocol produced by the students. Data were collected by means of after-treatment protocol whereby students were taught about the critical reading skills before they were asked to do the written protocol. Thus, after the skills were taught in class, the respondents were given a reading text. They were asked to read the text and respond to a question, which required them to utilize the skills taught. Students were required to respond to the following question:

Do you think hybrid cars using alternative energy will replace the regular petrol cars? State your reasons.

To fulfill this, students were given one hour to complete the task as it was conducted within class time. Details of the text selected are as follows:

Author	Title	Source
Michael D. Lemonick	How To Kick The Oil Habit (760 words)	Times (October 21, 2005)

DATA ANALYSIS

The data analysis of the protocol was conducted in two ways:

- 1) to identify the sub-skills of critical reading using a critical reading categorization scheme.
- 2) to identify the type of responses produced in the protocol; text-based, background knowledge-based and opinion-based.

Critical Reading Categorization Scheme

To analyze the responses of the students, a Critical Reading Categorization Scheme was utilized. The scheme was adapted from Sugirin's (1999) sub-skills profile, of which he developed to examine the sub-skills employed by learners to understand English language text. The profile developed by Sugirin was modified so that it is suitable for this study. Sub-skills which were ambiguous or seem to contain overlapping ideas were omitted from the scheme. The finalized profile, containing ten sub-skills altogether, was used to analyze the written protocols. After the analysis was completed, the number and percentage of occurrences of the sub-skills were calculated and tabulated in a table.

Table 1.0 Critical Reading Categorization Scheme

<i>GIVING CRITICAL RESPONSE</i>	
01	State personal standpoint on the issue discussed.
02	Provide reasoning for the opinion stated.
03	Provide explanations to support argument.
04	State opinions regarding the topic discussed.
05	Use background knowledge to support argument.
06	Extract information from text.
07	Give recommendations on the issue discussed.
08	Use facts or examples to support argument.
09	Use question cues in argument.
10	Draw conclusions for the topic discussed.

Type of Responses

In addition to the following sub-skills, the protocols were also analyzed in terms of three types, namely text-based, background knowledge based and opinion-based. Responses which were leaning towards information in the texts are categorized as text-based information while responses which were derived from the respondents' prior knowledge are categorized as background knowledge based information. Responses deriving from the respondents' opinion are categorized as opinion-based.

FINDINGS AND DISCUSSION

In describing the analysis of this study, the discussion is categorized into three parts which are the findings of the sub-skills used, types of responses found in the protocols (either text-based or background knowledge-based) and overall discussion of the findings. Furthermore, the analyzed protocol data which were rated by an inter-rater within the area of language shows that there are consistencies and similarity (81%) in the overall analysis of the protocol data.

Findings of Critical Reading Skills

Table 1.1 shows the results in terms of the number of occurrences of sub-skills used by the tertiary level students. As can be seen, a total of 97 occurrences of the sub-skills were employed.

Table 1.1 Occurrences of sub-skills used in Giving Critical Response

No	Critical Reading Skills	Total Number of Occurrences	Percentage of occurrences
<i>GIVING CRITICAL RESPONSE</i>			
01	State personal standpoint on the issue discussed.	10	10.31
02	Provide reasoning for the opinion stated.	8	8.25
03	Provide explanations to support argument.	10	10.31
04	State opinions regarding the topic discussed.	13	13.40
05	Use background knowledge to support argument.	6	6.19
06	Extract information from text.	23	23.71
07	Give recommendations on the issue discussed.	4	4.12
08	Use facts or examples to support argument.	14	14.43
09	Use question cues in argument.	3	3.09
10	Draw conclusions for the topic discussed.	6	6.19
	Total	97	100

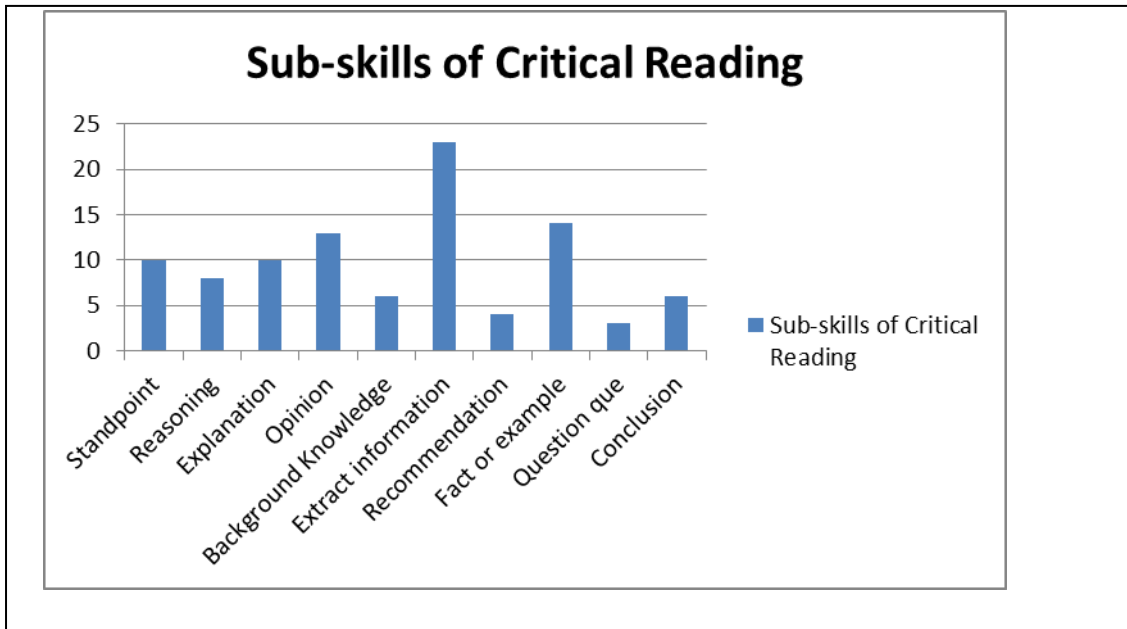


Figure 1.1 Sub-skills Used in Giving Critical Response

Based on Figure 1.1 above, the sub-skill of *extracting information from text* showed the highest number of occurrences, that is 23 times or 23.71% of total occurrences of sub-skills. This was followed by the sub-skill of *using facts or examples to support argument* with 14.43% of occurrences and *stating opinions regarding the topic discussed* with 13.40% of occurrences in the data collected.

The findings also reveal five moderately used sub-skills such as *stating personal standpoint on the issue discussed* (10.31%), *providing reasoning for the opinion stated* (8.25%), *providing explanations to support argument* (10.31%), *using background knowledge to support argument* (6.19%) and *drawing conclusions for the topic discussed* (6%).

The sub-skill of *giving recommendation on the issue discussed* occurred 4 times (4.12%) in the data collected while *the use of question cues in argument* had the least number of occurrences with only 3.09%.

Table 1.2 Type of Responses

Types of responses	Number of occurrences	Percentage (%)
Text-based	46	47.42
Background knowledge-based	37	38.14
Opinion-based	14	14.44
Total	97	100

Based on Table 1.2, it can be seen that there are more text-based sentences compared to background knowledge-based sentences in the protocol data collected. From all 10 sets of data which consisted of 97 utterances, 47.42% of the utterances were text-based, while another 38.14% were background knowledge-based. Besides, there were also 14.44% of opinion-based utterances.

Thus, in answer to the research question, the data shows that all the sub-skills of critical reading were used. However, of the ten sub-skills, three sub-skills were prominent, which include *extracting information from text, using facts or examples to support argument* and *stating opinions regarding the topic discussed*. Other moderately used sub-skills were *providing reasoning for the opinion stated, using background knowledge to support argument, giving recommendations on the issue discussed, using question cues in argument* and *drawing conclusions for the topic discussed*.

Further analysis on the data was conducted to examine the responses given by the subjects and to identify whether or not they are critical in responding to the text.

Qualitative Analysis of Critical Reading

In order to demonstrate the critical responses of the students, further qualitative analyses of the prominent three sub-skills were provided. They include *extracting information from text, using facts or examples to support argument* and *stating opinions regarding the topic discussed*. Excerpts of the written protocols are provided to demonstrate the texture of critical reading produced.

Based on Table 1.1 and Figure 1.1, the sub-skill of *extracting information from text* was the most regularly used by the respondents. The tendency of respondents in *extracting information from the text* could be clearly seen in their protocol because information was extracted by taking a phrase or part of a sentence available in the text. One example that shows the use of sub-skill *extracting information from text* was the sixth sentence of Respondent 1 as shown in excerpt 1 below.

Excerpt 1

“The next factor is where demand of oils actually exceeds supply, this is because of the rapid expansion of India’s and China’s energy needs in order to become new economies... countries.”

The phrase “rapid expansion of India’s and China’s energy needs” was extracted by the student from the last sentence of the text (Paragraph 9) which states “One is the unexpectedly rapid expansion of India’s and China’s energy need”. Here, it is clear that the subject was using the information in text to anchor his opinion about energy supply. He then moved further by employing his reasoning skill to point to the global imbalance between the demand and supply of oil, an information which was not explicitly mentioned in the text. From there, he related it to the rapid expansion of China and India’s economies. As mentioned by Fairbairn and Winch (1991) critical readers tend to employ their reasoning skills to analyze the given information in detail. In order to respond critically to the reading material, they combine the facts from the text with their own judgments about the current situation. Critical readers tend to use their reasoning skill to qualify or

connect their arguments with the text information. It is interesting to note that they are able to identify and connect the information given by text writer through reasons, arguments or supporting details.

This illustrates that students of Universiti Teknologi Malaysia (UTM) have a high tendency to *extract information from text* while responding critically towards a reading text. This situation was expected since the nature of reading activity is to expose readers to the issue of oil supply. Hence, readers certainly made use of information available in the text while responding critically to the text. Although with the limited language proficiency which some readers might have, they still tended to adopt and adapt detailed knowledge available in the text and link their opinion to the information.

The second sub-skill commonly used was *using facts or examples to support argument*. Examples and facts were used quite regularly by the readers to support their viewpoints and arguments while responding to the reading text. As mentioned earlier McWhorter (2004) states that *supporting argument with facts or examples* is one of the three crucial constituents of argument in critical reading. Therefore, the use of this sub-skill in the protocol indicates their ability to read critically. Sentences that show the use of this sub-skill could be found easily as the keyword like ‘example’ or ‘such as’ were used by respondents when giving examples. An example was evident in the ninth sentence of Respondent 8 as shown in excerpt 3.

Excerpt 3

“The other examples are ethanol from vegetable matter, wind power and synthetic gasoline form coal.”

Besides, there were also sentences which served to give examples or facts without using the word ‘example’. This can be seen in the tenth sentence of Respondent 1 (excerpt 4) which is used to support the idea that the petrol usage of a vehicle is a crucial aspect that buyers consider when they buy a car nowadays. In particular, the respondent talks about the context of Malaysia where one type of car, Perodua, is preferable from another, Proton, because of its petrol saving characteristics.

Excerpt 4

“We can see people in Malaysia now like to buy Perodua car compared to Proton in order to save the petrol.”

Hence, this shows that respondents of this study were capable of associating this sub-skill to their background knowledge.

The next sub-skill is *stating opinions regarding the topic discussed* which had 13.40% of occurrences in the data analyzed. In most situations, this sub-skill was used to strengthen the viewpoints or arguments made. It was not shown directly in the sentences written by respondents as there was no

keyword or phrase such as ‘I think’ or ‘In my opinion’ used in the sentences where readers’ opinion was stated. For example, the third sentence of Respondent 2 (as shown in excerpt 5) was actually an opinion regarding hybrid cars. However, the reader did not show it explicitly as the phrase ‘I think’ or ‘In my opinion’ was not found in the sentence.

Excerpt 5

“Since hybrid car’s idea is a good thing, we have to do more (produce) of it.”

In this excerpt there is a strong indication of the participant’s opinion. The first part of the clause is the premise created by the respondent which suggests his assumption of a hybrid car being a good idea or concept. Having stated the premise, he then proceeds to the next clause which heavily contains his opinion that more hybrid cars should be produced. It can, thus, be concluded that this respondent possesses the reasoning ability to connect an idea or assumption to his opinion.

The following sub-skills of *stating personal standpoint on the issue discussed* and *providing explanations to support argument* had equal percentage of occurrences, which was 10.31%. Thus, on average, each student employed these sub-skills at least once, while giving critical response to the reading text. The sub-skill of *stating personal standpoint on the issue discussed* was mostly illustrated in the first sentence of the written protocol. This was because respondents made use of the first sentence to respond to the question given and stated their position of whether regular petrol car will be replaced by hybrid cars using alternative energy. Moreover, the use of this sub-skill in the protocol could be easily detected because most of them utilized the word ‘yes’ or ‘no’ to state their position over the issue brought up in the text. Sometimes, the word ‘yes’ or ‘no’ was followed by the phrase ‘I think’. This sub-skill is considered crucial due to the fact that the readers were required to seriously think about the issue before they state their position. This can be found in the first sentence of Respondent 4 shown in excerpt 6 below to state his position over the issue discussed, while in excerpt 7, he provided an explanation for the position he took.

Excerpt 6

“Yes, I think the alternative energy will replace the regular petrol car.”

Excerpt 7

“The shortage of regular petrol car leads to an increment in price to it, and hence it encourages the car makers to look for economically feasible energy.”

In excerpt 6, the respondent states his positive standpoint regarding the issue, while in excerpt 7, he tries to provide some sort of justification to his standpoint. Setting the premise that shortage of petrol car production would increase the price of petrol car, the respondent seems to jump to the conclusion that the situation would result in car makers seeking for ‘economically feasible energy’.

Although this sample indicates an attempt by the respondent to employ the sub-skill of *providing explanations to support argument*, the attempt does not seem workable as there seems to be some missing link to the information and idea mooted. Overall, this sub-skill was mostly used by respondents to give extra information in supporting their standpoint, reasoning, and opinions.

The next group of sub-skills, such as, *providing reasoning, using background knowledge to support argument, giving recommendations, using question cues in argument and drawing conclusions for the topic discussed* seems to be rarely used by UTM students while making critical response. As shown in Table 1.1, these sub-skills occur less than 5% of the total occurrences. Nevertheless, even though the percentages of occurrences of these sub-skills were quite low, it shows that there were elements of critical reading used in the students' responses. The fact that these less prominent sub-skills were utilized indicates that these sub-skills could be incorporated in the class lessons to enhance these skills among the readers (McWhorter, 2004 and Crismore, 2000).

DISCUSSION

The findings show the performance of critical reading among students of UTM. Based on the findings, it can be said that UTM students are able to perform all the critical reading skills examined in this study. It was also found that some of the sub-skills were used repeatedly.

Overall, the sub-skills employed by readers in performing critical reading skills illustrate their performance of critical reading. Ranked in order, five sub-skills found to be regularly employed by the readers were *extracting information from text, using facts or examples to support argument, stating opinions regarding the topic discussed, stating personal standpoint on the issue discussed* and *providing explanations to support argument*. The first two sub-skills (*extracting information from text* and *using facts or examples to support argument*) illustrate how the readers attempted to anchor their statements from the information in the text before they move on to provide their interpretation and analysis of the information. This is not surprising as the students were from the science faculty whose discipline would generally focus more on the scientific facts or information before further analysis is given. The students were also observed to gradually move their responses from factual to more opinionated protocols, as can be observed in the findings of the sub-skills *stating opinions regarding the topic discussed, stating personal standpoint on the issue discussed* and *providing explanations to support argument*. These results demonstrate that understanding, interpreting, synthesizing and analyzing the information read from the passage are the cognitive processes that occur in the readers' mind.

Other less regularly used sub-skills were *providing reasoning for the opinion stated, using background knowledge to support argument, giving recommendations on the issue discussed, using question cues in argument* and *drawing conclusions for the topic discussed*. When using *providing reasoning for the opinion stated* and *using background knowledge to support argument*, students were in actual sense moving towards deep level thinking by providing reasoning and supporting their arguments using their prior knowledge. The evidences indicate that there were elements of relating new ideas presented in the reading text with their pre-existing knowledge. This is comparable to Wallace's idea (1992:29) of readers choosing to progress "within the text itself and those external to it". However, it must be

noted that the readers had not fully mastered these sub-skills due to their tendency to depend on the information in the text. Other sub-skills such as *giving recommendations on the issue discussed*, *using question cues in argument* and *drawing conclusions for the topic discussed* also seem to be less convincingly used by the readers, although they provide evidence that these sub-skills could potentially be taught to the students to further enhance and instill the skill in them.

CONCLUSION

As a conclusion, tertiary level students, specifically UTM students were proven to acquire the critical reading skills. Protocol administered shows that they were able to perform all the skills although it was found that the students depended heavily on the text while producing the protocols. Hence, this indicates that critical reading skills taught should focus more on the critical aspect so as to produce students who are more competent in performing critical reading skills. This should also be done to avoid students from being fossilized in using the sub-skills which were less critical.

Crismore (2000) states that many university students have not been given adequate opportunities to encourage them to read and think critically. Students were not equipped with sufficient critical reading skills that will enable them to perform well in university. The protocol administered also proves that university students tend to use the critical reading sub-skills moderately. The findings of this study revealed that the sub-skills of critical reading used by university students were mainly more general in nature which flow within surface level thinking. It was also found that most sentences produced in the protocol were text-based rather than background knowledge-based. It is recommended that these sub-skills are given more attention in the teaching and learning process to make sure that the university students are able to read more critically. In conclusion, critical reading skills should be integrated in the learning process as early as possible so that the skills can be utilized by students to improve their studies.

ACKNOWLEDGEMENT

We would like to acknowledge and extend our gratitude to the Research Management Centre, Universiti Teknologi Malaysia for the Research University Grant with the vote no. Q.J130000.2641.13J21.

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