

THE QUALITY OF STUDENTS' MIND MAPPING AT IAIN BUKITTINGGI

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Abstract

Commonly, many students still get difficulty in reading comprehension. It is hard for them to gain the essence of information among the overlapping sentences. Therefore, the lecturer provides them strategies to handle it. Among others is mind mapping strategy which facilitates the students in acquiring the important informations of the textbook effectively. This study dealt with investigating of the quality of students' mind mapping. This is a descriptive research by using mix method. The data collection included the documentation of mind mapping, reading comprehension test, and observation. The result concluded that the lecturer had applied the mind mapping strategy optimally and also facilitated the students with *iMindMap* application. Due to the quality and the scoring system of the students' mind mapping were good. Since, the mind mapping was a learned-skill, optimizing, controlling and practicing on students' mind mapping were needed in order to achieve the maximum usefulness.

Keywords: *mind mapping strategy, reading comprehension.*

Introduction

Reading comprehension enables the readers to acquire information and give outcomes after reading activity. However, in comprehending the content of passage in a textbook, the students should be able to derive the essence of information relating to the topic among the overlapping sentences. Team of five (2006) states that the reading skill will be improved depends on the students' ability to understand each sentence in the text. It is easy to understand the simple sentences, but in English textbook for college students, especially English educational students, there must be complex sentence, compound sentence, complex compound sentences, and advanced vocabularies used by the native writer to express the ideas. It will need more effort for them to comprehend it. therefore, in reading activity, reading comprehension strategies can be used to help the students comprehend the content.

The lecturer may have varieties of reading comprehension strategies which is appropriate to his class in order to help students comprehend the material. According to Kavinsahi and Zafarghandi (2016) there are three strategies that are commonly used in reading comprehension: skimming and scanning, mind mapping and summarizing. Skimming refers to a process of reading the main ideas within a passage to get an overall impression of contents. Then, scanning focuses on the detail information that the students need to cover by ignoring the unrelated information. And, summarizing is defined as a strategy of taking a note of important information. Meanwhile, mind mapping displays the connections of the main idea with its detail information effectively and creatively. It combines all informations (main ideas, detail information, and important information) which are covered by skimming, scanning and summarizing at once.

The lecturer may choose one of strategies which are considered appropriate with the students' needs to help the students in comprehending the topic. In additional, Ardakani (2015) mentions that mind mapping technique can help students to improve their reading comprehension ability. Commonly, it is impossible to know what the students' really comprehend inside their brain until it transforms into product of reading comprehension. One of its product is mind mapping. Buzan (1993) also says that "if the purpose of an examination is to test students' knowledge and understanding rather than their writing ability, the mind map is the ideal solution". Thus, it can be a consideration that mind mapping can present the students' reading comprehension. Many studies has done related to the application and influence of mind mapping in many aspect of education, such as a study by El-Mona (2008), "The influence of Mind Mapping on eighth graders' science achievement", Budd (2004) applied mind mapping as classroom exercises, D'antoni (2005) in *Journal of Chiropractic Education*, "*Applications of the Mind Map Learning Technique in*

Chiropractic Education”, Cain (2001), “Using Mind Maps to raise standards in literacy, improve confidence and encourage positive attitudes towards learning” and etc.

At IAIN Bukittinggi, the lecturer was consistent to use mind mapping in order to force the students to read the textbook and comprehend it before having a class discussion. The lecturer together with the students applied mind mapping as their learning strategy. He also facilitated the students by the up to date *imindmap*. It was the official mind mapping software which was endorsed by the inventor of mind mapping, Tony Buzan. Mind mapping is consistently used because it allows the students to interpret the topics by their own way so that it helps the students’ reading comprehension of the textbook.

Method

The data in this research were divided into two, qualitative data and quantitative data. The qualitative data were gathered from observation. Meanwhile, the quantitative data were got from documentation of mind mapping and reading comprehension test. The qualitative data were gathered by observing the lecturer without interrupting the lecturer during teaching and learning process. The observation sheet was used to collect the data about use of mind mapping during the learning process. The observations were done for six times during class activities.

The mind mapping was collected at the last of learning process. The researcher only collected the mind mapping from topics chosen. Then, the choice of topic was based on the syllabus of sociolinguistics subject. After collecting the mind mapping from six meeting, the researcher gave the students the reading comprehension test related to the topics of their mind mapping. It was assumed that the student who created the mind mapping after reading and comprehending the material in the textbook could answer the test given. The test had six questions in the form of essay. Then, the students were given opportunity to answer the questions for 100 minutes.

Result and Discussion

1. Mind mapping scoring system

Since the students’ interpretation of passage is difficult to quantify, whether they really understand about the textbook they read or not, the rating scales and rubric assessment is needed to guide the assessment process. The rubric assessment is used to assess students quality of mind mapping together with its performance or content. It will check item by item of mind mapping whether the students’ mind mapping have covered the information which is intended to cover. It is started from the main idea or central image to the sub theme and sub-sub theme. The scoring system is proposed by D’Antoni, Zipp and Olson (2009), as follow:

Table 1. Scoring system of mind mapping

- 1st level concept links (2 point for each if valid)
- 2nd level concept links (4 point for each if valid)
- 3rd level concept links (6 point for each if valid)
- 4th level concept links (8 point for each if valid)
- Cross links (10 point for each if valid)
- Examples (1point for each if valid)
- Relationships (3 point if valid)
- Picture, Image and Figure (3 point if valid)
- Invalid component (0 point)

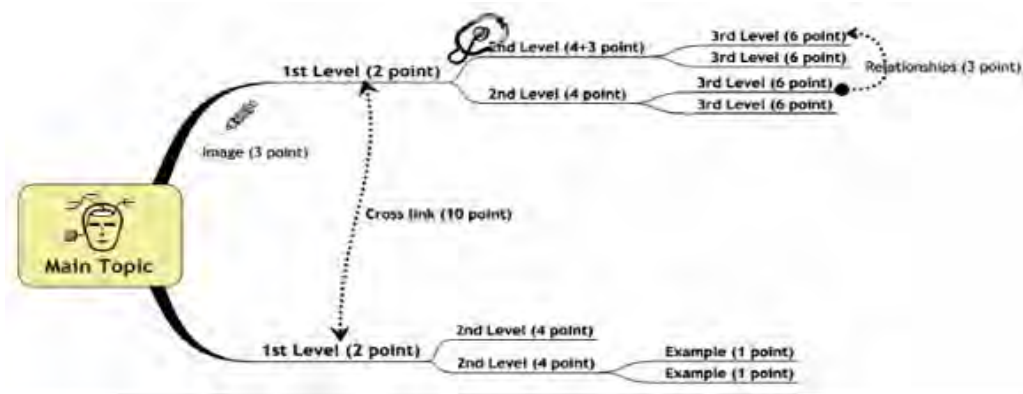


Figure 1. Mind Mapping

The image above explain that the main point of mind mapping is its link from main topic to very detail informations. It means that the more links that the students can apply in their mind mapping, the more point they will get. It can be seen from four levels of link and cross link, it is caused by the hierarchy rules of the mind mapping, it means that every mind mapping must start from main idea to the very details information. In line with it Fardiansyah (2015) proposes that at least there are 4 elements of mind mapping such as main topic, sub-theme, order, and hierarchy lines. the main topic will be the subject of whole mind mapping, then the sub theme is the braches which is related to main topic, each of branch may have more than one details; it is called as sub sub-theme, meanwhile the hierarchy lines show the relationships among level, The image also present that more branches of each topic as its details, will get higher point. Other additional point is got from example, relationship and image/picture/figure. Meanwhile, the invalid component is not counting.

While considering the use of mind mapping as a piece of student work, the lecturers can give advises or assessment of the students' Mind Mapping in order to figure out the students' reading comprehension. A rubric for assessment had to be developed. The way in assessing the quality of students' Mind Mapping can be observed by using the assessment rubric of Mind Mapping which is adapted from Beyond Monet (2004) and Robbie O'Connor (2011)

The students' Mind Mapping are measured by this rubric in order to get the accurate assessment. There are five categories in measuring Mind Mapping, such as: comprehensiveness, organization, communication, layout and correctness. These each category has four sub categories that is scored from four points for exemplary, three points for accomplished, two points for developing and one point for beginning. All scores for each categories is added. The highest mark is 20, to get the final score, the rubric scores can be translated into grade exemplar which is proposed by Loncto (2008).

Table 2. Grading exemplar

Point Earned	Letter Grade	Translating to a Point System	Recordable Points
20	A+	$\frac{20}{20} \times 100 =$	100
19	A+	$\frac{19}{20} \times 100 =$	95
18	A	$\frac{18}{20} \times 100 =$	90
17	A-	$\frac{17}{20} \times 100 =$	85
16	B+	$\frac{16}{20} \times 100 =$	80
15	B	$\frac{15}{20} \times 100 =$	75
14	B-	$\frac{14}{20} \times 100 =$	70
13	C+	$\frac{13}{20} \times 100 =$	65
12	C	$\frac{12}{20} \times 100 =$	60
11	C-	$\frac{11}{20} \times 100 =$	55
10	D+	$\frac{10}{20} \times 100 =$	50
9	D	$\frac{9}{20} \times 100 =$	45
8	D-	$\frac{8}{20} \times 100 =$	40
7	Unacceptable Range		
6			
5			
4			
3			
2			
1			

The steps in doing assessment is started by preparing a mind mapping model of chosen material, this model will be a comparison to check the students' mind mapping. The scoring scale is used to

check the quantity of students' mind mapping whether it has covered all the key words that should be presented in mind mapping, whether the information missing or not. Then the score from scoring scale will be calculated into rubric assessment to obtain the quality of the students' mind mapping performance and content. At last the rubric assessment score can be translating by using grading exemplar to get the final score and clarifying their score by using score interval (adapted from Arikunto (2009), in order to know in what level the students' mind mapping are. To get more detail on mind mapping by using imindmap application as follows:

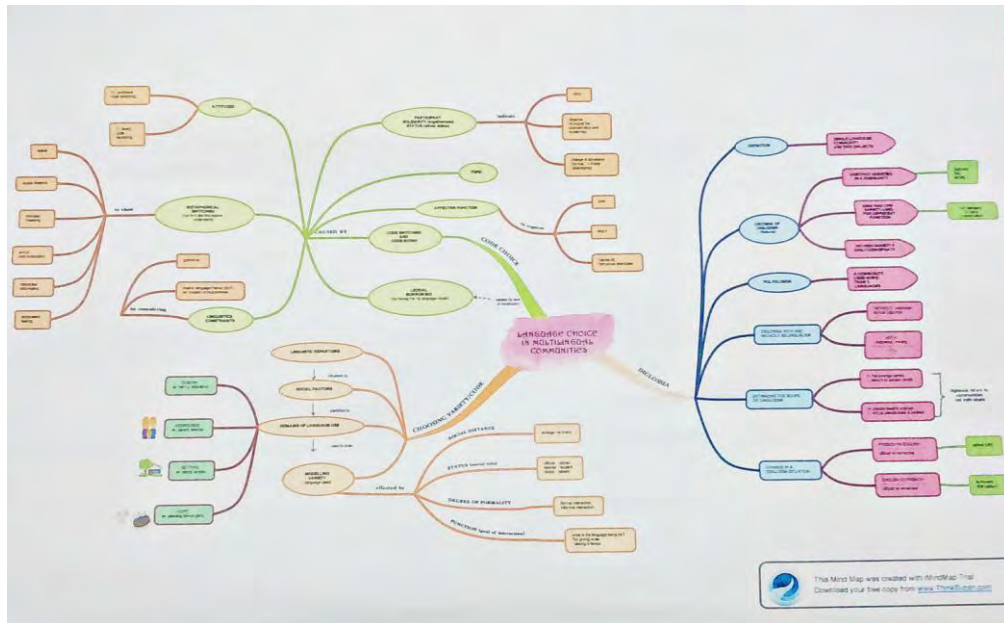


Figure 2. imindmap Application

After scoring and clarifying the students mind mapping by using rubric assessment which is adapted from O'connor (2011) and Monet (2001) and scoring system from D'Antoni et.al (2009), it is found that most of the students are in accomplished level, it means that they have good ability in drawing their mind mapping, 73% of them are able to draw their mind mapping through the application of mind mapping, it shows that the students got used to apply mind mapping during their learning activity. Unfortunately, only 7% of them are in exemplary competent in drawing mind mapping, and 20% among them are in developing level, they can use the mind mapping application but they still need more practice to upgrade their mapping skill.

Another important facts revealed in this research that although the students mind mapping seems good but they only good in the basic skill. In other word, they can reach higher level, such as accomplished and exemplary level but still in the lower skill of mind mapping. Thus, the researcher should consider this fact in designing the standardised of mind mapping which is used as the guidance in scoring their mind mapping. as stated by O'connor (2011) there are three classification of students' skill in creating mind mapping, such as basic skill, intermediate and advanced. This quite impossible for them to be advanced in mind mapping if they are less of practise. The students should get trough step by step to become advanced in mind mapping. It also become the consideration for the researcher to compare their mind mapping equal or one level above their skill, if the mind mapping standardised used was advanced skill, the students scores are in the range unacceptable score range.

Practically, The lecturer has done a good effort to facilitate the students with a good strategy, but the result happend in opposite. It caused by many factors that beyond the lecturer's control. Furthermore, Buzan (1993) indicates "Mind mapping is a learned skill, however, like all skills, it needs the practice to achieve maximum usefulness". It can be conclude that the students cannot feel the usefulness of mind mapping if they do not use mind mapping optimally. A few them tend to duplicate their fellows' mind mapping, they only copy their friends mind mapping and change the theme, layout and colour by using imindmap application. Although the students can create mind mapping in colourful and eye catching which was facilitated by mind mapping application but unfortunately they only re-write the heading, bold and italic words from their textbook or their friend mapping. These become one of the weaknesses of using application in drawing mind mapping.

From this result, although Buzan (1994) states that mind mapping helps the students to understand the lesson easier than they write a summary in the form of standard note taking. But the habitual become the problem here. The students are accustomed to write the summary by using standard note-taking. They assumed that mind mapping is less of information because it is lack of sentences while standard note-taking can offer full informations. This assumption rise up because of their misconception of keywords power. In fact, keyword is not simply words but it is boosting the ideas inside the brain if they could use is properly. This function of keywords was not applied maximumly by the students.

Finally, after calculating the scoring system of students' mind mapping, The students level of ability in drawing mind mapping can be displayed from the chart as follow:

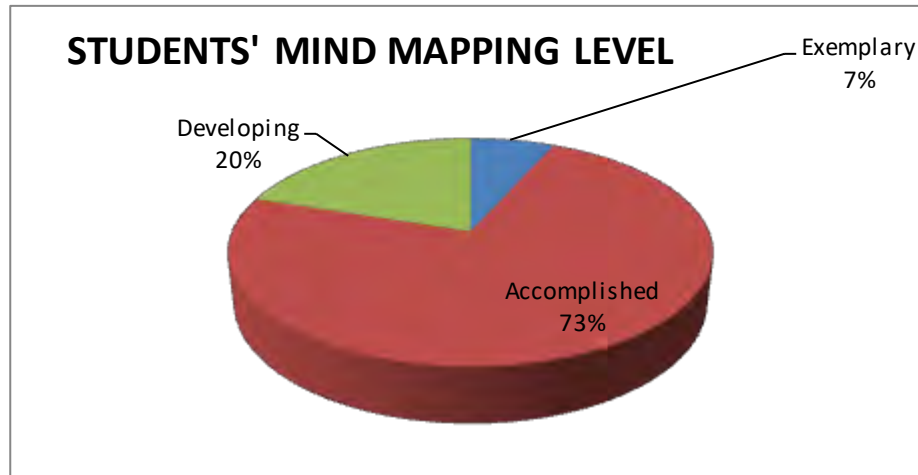


Figure 3. Students' mind mapping levels in percentage

Based on the figure above, most of the students are in accomplished level, it means that they have good ability in drawing their mind mapping, 73% of them are able to draw their mind mapping through the application of mind mapping, it shows that the students got used to apply mind mapping during their learning activity. Unfortunately, only 7% of them are in exemplary competent in drawing mind mapping, and 20% among them are in developing level, they can use the mind mapping application but they still need more practice since mind mapping itself is a learned skill, it needs more practice to achieve the maximum usefulness.

2. The relationship of mind mapping and reading comprehension.

English department students may enter the classroom with different levels of reading which they may have different needs. Some of them may lack of information and require more explanation from the lecturer, while others students may have comprehended the content that the lecturer intends to cover. Due to these students' different needs in reading comprehension, it is necessary to have an ongoing assessment in reading comprehension, because Rhodes and Shanklin, (1993) state that assessment provide the lecturer with the information needed to develop appropriate lessons and improve instruction for all students. In assessing reading comprehension, the assessment tool for college students in general usually done by giving comprehension check questions as in standardized testing, but assessment itself is more than just a test. A single assessment cannot represent the students' reading comprehension of the material, thus the lecturer should use multiple assessment, because Snowling (2009) states that reading comprehension also can be assessed by analyzing its comprehension products of representations, such as written work, assignment, conversation, discussion and so on.

Mind mapping as one of its comprehension product is popularized by Buzan (2005) who claims that it is an enormous superior note-taking method. It give a large number of effectiveness in every aspect. Moreover, (Ingemann, 2008) also says that by mind mapping one can develop their ability in memorizing, brainstorming, learning, as well as creativity. In comprehending a text the students must have background knowledge which is divided into two, background knowledge of the language and background knowledge of the world (Stanovich, 1991; McNamara, 1991, Silberstein, 1994). This means through mind mapping the students are guided to develop their background knowledge of the text they are to read. They recall the existing knowledge and relate it with the text. By doing this they are practice to brainstorming.

Moreover, Kaufman (2010) argued that "mind mapping is a useful technique to use while reading, since the non-linear format allows you to view the entirety of your notes at a glance, then easily place new

information in the appropriate branch or make connections between ideas.” This is in line with the theory of top-down process proposed by Nuttall (1996, cited in Brown, 2001). Top down is a process where the reader draws their own intelligence and experience to understand a text. Beside, the involvement of the generic structure of the text also covered by bottom-up process. Bottom-up is deals with the linguistics aspects such as words, phrase, grammatical cues and discourse marker (Brown, 2001). Generally, mind mapping combines both process of reading comprehension: top-down and bottom-up processes. In other words, it adopts the way brain organizes our knowledge and experiences. In simple words, mind map is a visualization of the brain works. Mind mapping technique is similar to semantic-map technique. What makes them different is the use of colors but most of all they are the practice of brainstorming which help the reader to link the information each other in order to be easy to remember.

The students’ mind mapping as the product of their reading comprehension should be able to show how much they have already comprehended of the passage they read. It can be seen through the indicator of reading comprehension that covered by the indicators of mind mapping assessment. Each categories of mind mapping can cover more than one indicators of reading comprehension such as, finding the topic, main idea and specific information, these indicators are covered in the first categories of mind mapping is comprehensiveness, because in this category the student will get the highest score if their mind mapping can define the topic, main idea and supporting detail.

There are four levels of score in every category, such as in beginning level the student usually have unclear representation of topic, main idea and additional information/supporting detail of the material, it is proved by there are significant elements that are missing from the their mind mapping. In developing level, the student mind mapping has presented adequate representation of each topic and sub topic to demonstrate a basic understanding of the topic. Accomplished level, the students’ mind mapping have showed clear information about their understanding on topic, main idea and additional information but still has one or two missing significant elements. Meanwhile, in exemplary level the student mind mapping is in stands out form, it has defined the main idea, topics and sub topics. They all are represented in mind map without any one element missing.

Next indicator of reading comprehension is reference words, in mind mapping it represents by the use of key words. This indicator is showed clearly in the third category of mind mapping, communication. In the beginning level of communication the students are still limited in using key words, in developing level they have use a few of key words but they still have average understanding of topic. Furthermore in accomplished level they have good understanding of the topic and also good use of key words and connect to central topic. In the exemplary level the students have had highly effective use of key words and deep understanding of topic, implicitly in this category the first indicator (finding topic) of reading comprehension also have been covered.

The last indicator of mind mapping is guessing the words meaning from the context, this indicator demands for a deep understanding from the students, if he does not comprehend the topic then he will have a misconception of the topic. In the correctness category of mind mapping this indicator is covered. Such as in beginning level the students’ mind mapping is naïve and contain misconceptions about the topic area and inappropriate terms are used in their mind mapping. This means that the students are fail in guessing the words meaning from the context, if he has a good reading comprehension he should not do a misconception of the topic. The second level is developing level, in this level the students’ mind mapping have some subject matter inaccuracies but these are not fundamental. Meanwhile in accomplished level there are only a few subjects matter inaccuracies. In the last level (exemplary level), the students mind mapping integrates the elements correctly and reflects an accurate understanding of the subject matter with no misconceptions.

From that comprehensiveness, communication and correctness categories of mind mapping the five indicators of reading comprehension have been covered mean while organization and layout categories support all indicators of reading comprehension, because a good organization means that the students mind mapping is well organized with element integration and topics linked is appropriate, feedback loops are also used where appropriate and the branch structure is sophisticated. Meanwhile a good layout represents an effective use of colour, or links to make connections between ideas meaningful. Those explanations above show that mind mapping and reading comprehension has a relationship each other. It is expected that mind mapping as a product of reading comprehension can reflect the students’ reading comprehension.

Conclusions

Based on the discussion mention previously, it can be concluded that the quality of students’ mind mapping are good. Mind mapping consists of key words which link from central image to the detail informations, although it lacks of sentences in contrast with standard note taking, it does not mean that mind mapping present less information then standard note taking. Albert einstain says that ,if you cannot

explain it simply, you do not understand it well enough". It become a consideration that mind mapping with its simplicity can provide more information. It also can visualize the students' knowledge, which help the lecturer to get information needed to develop appropriate lesson and improve instruction for students. In addition, mind mapping have relationship with reading comprehension, it is proved from the process of getting important information and the similarities in indicator of mind mapping assessment and reading comprehension. It is expected that mind mapping can influence the students reading comprehension if it is used optimally in learning process. The researcher also offers several suggestion. First, optimizing the used of mind mapping in learning process. Creating the application for assessing students' mind mapping.

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