

The Levels of Thinking Skills in The Reading Comprehension Questions Given by the English Teachers of The Senior High Schools

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Abstract. The goal of teaching English at the senior high school is to enable students to use English for communication, both oral and written. The focus of the English classes is on the needs for being able to read in English. Reading activity is regarded as a complex process; and thus, requires the manipulation of more high-order thinking skills than low-order thinking skills. Teachers commonly give reading comprehension questions to their students both as reading exercises and tests. This study aims at finding out the levels of thinking skills in the reading questions given by the English teachers of the senior high schools. The source of the data was the questions given by 5 English teachers. The findings show that 28.39% of the total number of the questions require students to use high-order thinking skills to answer them and 71.61% of the total number of questions require students to use low-order thinking skills. As a complex process, reading should not be seen as a linear progression of thinking skills. Hence, students should be trained to jump between various levels of thinking; this means that they should be trained to create meaning as a result of the negotiation between their schemata, the nature of the texts, the writers' message, and other features of reading. In the reading class, teachers should provide students with various questions which require the manipulation of more high levels of thinking.

Introduction

The teaching of English at the senior high school is focused on the use of English for communication, both oral and written. The English teaching is based on the literacy approach and the materials cover the four English language skills, namely: listening, speaking, reading, and writing. Along with the vast development of science and technology, English written texts have become more and more important tools of communication across nations. Therefore, the needs for being able to read in English is of paramount importance these days.

Pressley (2009) describes reading as 'a hierarchy of skills, from the skill of processing individual letters and their associated sounds to word recognition to text-processing competencies.' Reading is defined as 'the process of constructing meaning through the dynamic interaction of the reader's prior knowledge, the information suggested by the written text, and the context of the situation'. It is clear that the goal of reading is comprehension. Neil Anderson (in Nunan 2003, p-68) defines reading as a fluent process in which readers combine information from a text and the readers' background knowledge in order to build meaning. This process

of building meaning is a complex one as it accounts for the concept that fluent reading should be rapid, purposeful, interactive, comprehending, flexible, and gradually developing. It is stressed further that meaning does not rest in the reader nor does it rest in the text. Meaning is the integration of the reader's background knowledge and the text. The act of reading is a combination of the text, the reader, fluency, and reading strategies.

As a complex process, reading requires more higher-order thinking. Edwards, et.al. (2009) state that the use of thinking skills in problem situations is universally considered as prominent objective for all education academies. There are six levels of cognition in Bloom Taxonomy which are grouped into the lower-order thinking skills and higher-order thinking skills. The lower-order thinking skills consist of three levels, namely: knowledge, comprehension, and application; while, the higher-order thinking skills comprise of the analysis, synthesis, and evaluation levels.

As commonly observed, English teachers of the high schools use questions to check their students' comprehension of the texts given in the reading exercises and in the reading tests. Various questions formats like subjective, true-false, or multiple-choice are used. Based on the concept about reading and the process of reading as explained above, in order to know whether students comprehend the reading texts, the questions given should be of the six levels of cognition. However, questions of the lower-order thinking skills are assumed to be easier to make and their answers are easier to be scored than questions of the higher-order thinking skills.

As a mental process, someone's comprehension is not easy to be revealed and measured. English teachers should realize the fact that students' comprehension abilities develop through exercises that requires various strategies and skills supported by strong cognitive abilities. This is to say that the questions of higher-order thinking levels must be given to the students to develop their comprehension as well as to reveal their comprehension of the reading texts. The questions given by English teachers in the reading classes in the senior high schools consist of questions developed by the teachers themselves, the questions they take from English textbooks, and other sources.

Being interested to know the levels of thinking skills required from the students in answering the reading comprehension questions, the writer conducted a study in the form of a survey. For this purpose, the writer has collected 560 reading comprehension questions to be analyzed to find out the levels of thinking skills in the questions. It is expected that the result of the study can increase the English teachers' awareness that questions of different levels of cognition especially of the higher-order thinking levels should be given to the students. It is expected that practicing answering questions of the high-order thinking skills will help students develop their problem solving skills needed for their future academic study.

Methodology

Data Source

The data of the study are the questions given by 5 English teachers of two private senior high schools in Surabaya for the reading classes and reading tests. They are the questions developed by the teachers and the questions taken from the English textbooks and other sources.

The questions were the ones given to the 12th graders. The decision to take the questions from the third grade of the senior high schools is based on the reason that this is the highest grade of the secondary schools. This means that the reading classes should be planned to prepare students for the final exam of the secondary education. Another reason for taking the questions for the third graders of the senior high schools is that this is the nearest level of education just below the university level.

Parameters

After the data were collected, they were analyzed based on the parameters covering the descriptions of cognitions and the behaviors of the six categories of Bloom's cognitive domain which are grouped into the higher-order thinking and lower-order thinking skills. The analysis was done to reveal the levels of thinking skills required to answer the questions given by the teachers. The parameters are as follows

Table 1: Parameters for the Data Analysis

High-order thinking	Evaluation Justifying a decision or course of action Checking, hypothesizing, critiquing, experimenting, judging
	Synthesis Putting parts together to form a new whole. Composing, proposing, producing, assembling, hypothesizing, rearranging
	Analysis Breaking information into parts to explore understanding and relationships Comparing, organizing, constructing, interrogating, finding
Low-order thinking	Application Using information in another familiar situation Implementing carrying out, using, executing
	Comprehension Explaining ideas or concepts Interpreting, summarizing, paraphrasing, classifying, explaining
	Knowledge Recalling information Recognizing listing, describing, retrieving, naming, finding

Findings and Discussion

The data consist of 560 reading comprehension questions. These are the questions given by 5 (five) English teachers of two private senior high schools to their students. The teaching experiences of the teachers range from 4 years up to 29 years. The questions in the data take the forms of the subjective questions and multiple-choice questions having 4 or 5 options with one correct answer. The data source is presented in the following table:

Table 2: Data Source

Data source	TE	NoT	NoQ
School A			
Set A1	4	8	75
Set A2	28	25	129
Set A3	10	11	66
School Y			
Set Y1	12	29	162
Set Y2	23	23	128
Total		96	560

Notes:

TE = Teaching Experience

NoT = Number of texts

NoQ = Number of questions

The result of the analysis shows that out of the 560 questions collected for the study, 148 questions belong to the knowledge level, 238 questions belong to the comprehension level, and 10 questions belong to the application level. In all, 396 questions (70.71%) manifest the low-order thinking skills. The result shows that there are 157 questions belonging to the analysis domain, no question belonging to the synthesis domain, and 7 questions belonging to the evaluation domain. In all, there are 164 (29.9%) questions manifesting the high-order thinking skills. The result is summarized in the following table:

The analysis of the data has categorized the questions manifesting high-order thinking and low-order thinking skills. Questions manifesting high-order thinking skills are those belonging to the analysis, synthesis, and evaluation levels of Bloom's cognitive domain, while questions manifesting low-order thinking skills are those belonging to the knowledge, comprehension, and application levels of the domain. The manifestation of each thinking skill is indicated by the choice of the verb used in the question as well as the type of the information, facts, or concepts.

Questions requiring Low-Order Thinking skills

The result of the analysis shows that 71.61% of the questions manifest low-order thinking skills and 28.39% manifest high-order thinking skills. The biggest percentage of the questions belonging to the low-order thinking falls to the comprehension level which is 43.39 percent. Successively, 26.43% of the questions belong to the knowledge level which is the lowest level of learning outcomes in the cognitive domain. Only 1.79 % of the questions fall into the application level. At these levels of comprehension, students were mostly asked to grasp the meaning of materials rather than producing knowledge. This also means that the students' answers were literally stated in the texts; students were not given a chance to produce their own thinking. Thinking skills are limited to understanding literal meanings of the texts only as the questions did not require students to deploy exploration of ideas.

The questions belonging to the comprehension level include the followings (Notes: the following questions are presented as they were written in the data source):

- (1) asking references; e.g.:
 - question A1, text genre: recount, no 72: *"Who was 'he' on the sentence 'At the same moment, a man leapt out of the back of her car where he had been ...' (par 5)"*
 - question A2, text genre: explanation, no 66: *"What does the word 'you' in paragraph one refer to?"*
- (2) asking the meaning of a word, phrase, or sentence; e.g.:
 - question A2, text genre: discussion, no 117: *"What does 'unreliable' (par 3) mean?"*
 - no 119: *"The word 'graduate' (par 4) means"*
- (3) interpreting material by explaining and summarizing parts of the materials, e.g.:
 - question A1, text genre: report, no 30: *"Why is a cyanophyta called the oldest form of life with photosynthesis?"*
 - no 31: *"How does a chlorophyta grow?"*

The questions included in the knowledge level include the questions:

- (1) asking the recall of parts of the reading texts, e.g.:
 - question A1, text genre: report, no 33: “*Where can you find a phaeophyta?*”
 - no 34: “*How does a phaeophyta look like?*”
 - no 35: “*What is the last paragraph about?*”
 - question Y1, text genre: narrative, no 22: “*Who accompanied Sangkuriang to go hunting?*”
 - no 23: “*Did Sangkuriang know that Dayang Sumbi was his own mother?*”
 - no 24: “*Did Sangkuriang finally fulfill the Dayang Sumbi request?*”

The questions belonging to the application level require students to use learned materials in new situation, e.g.: questions A1 no 42 and 43 (text genre: explanation)

- *Suppose you will buy a pair of sunglasses at LILI MASOEM. The price is Rp 250.000. how much should you pay?*
- *You will also buy a tube of glass cleaner. The price is Rp 10.000. How much should you pay?*

These questions require students thinking skills which are limited to the ability to process information and facts taken from the texts only; thus, do not requires students to produce knowledge and ideas—going beyond the meaning of the texts which requires the manipulation of high-order thinking skills.

Questions requiring High-Order Thinking Skills

It is said that comprehending texts requires the skills of high-order thinking so that meaning creation can be achieved by a reader. Among the questions belonging to this category (28.39% of the total number of questions), only 7 questions (out of 560 questions) asked students to deploy the highest level of thinking that is the evaluation level of Bloom’s cognitive domain. The examples of these questions are the followings (Notes: the following questions are presented as they were written in the data source):

- Question Y1, text genre: narrative, no 16: “*Having comprehended the story, state a moral value you can find from the story.*”
- Question Y1, text genre: narration, no 25: “*what is hunting? Do you think it is a good activity? Why or why not?*”

These questions required students to use their high-order thinking skills in expressing their ideas about the moral values of the message of the text and give judgment. In this way, students became the producers of concepts; and thus, they go beyond the meaning of the texts. There are 152 questions (27.14%) out of the 560 questions requiring students to use the pre-specified concepts and knowledge (the concepts and knowledge about text genre, the generic structure of texts, certain parts of the generic

structure) to the new situations which are the reading texts presented to them. It is worth noted that most of the questions in this category are the questions presented by the teacher who is not with the longest teaching experience. Although these findings cannot be used to make generalization, it shows that making questions manifesting high-order thinking skills may need more efforts from the teachers; moreover, scoring students' answers to such questions arouses more difficulty to the teachers.

Conclusions and Suggestions

One of the national goals of education in Indonesia is to improve the nation's competitiveness in taking parts in the international communication in this global era. It cannot be denied that the role of the English language has become more and more important in the international communication. As a result, the teaching of English at all levels of education in Indonesia has to be considered as a serious matter. One of the objectives of teaching English at the senior high school is the help students to have the communicative competence so that students can get involve both in the oral and written communications. In this modern world, almost in every activity people are doing in their everyday life, they meet English texts. Thus, reading has become more and more important to deal with in order to keep up with the development of science and technology.

Neil Anderson (in Nunan 2003, p-68) defines reading as a fluent process in which readers combine information from a text and the readers' background knowledge in order to build meaning. This process of building meaning is a complex one as it accounts for the concept that fluent reading should be rapid, purposeful, interactive, comprehending, flexible, and gradually developing. It is stressed further that meaning does not rest in the reader nor does it rest in the text. Meaning is the integration of the reader's background knowledge and the text. The act of reading is a combination of the text, the reader, fluency, and reading strategies.

As a complex process, reading requires more higher-order thinking. Edwards, et.al. (<http://pubs.aged.tamu.edu/jsaer/pdf/vol50/50-00-015.pdf> , accessed 22/7/09) states that the use of thinking skills in problem situations is universally considered as prominent objective for all education academies. To attend to this matter, the reading comprehension questions given to the students should manifest more high-order thinking skills rather than simply recall facts and pre-specified information. In this way, students are trained to manipulate information and ideas to create meaning. Meaning creation happens when a reader is making use of thinking skills to combine facts and ideas in the process of reading to produce new knowledge. This also means that in an efficient reading class, the teacher should give questions that allow students to produce knowledge - activities which present uncertainties. Such questions will train students to manipulate their high-order thinking skills in analyzing,

synthesizing, and evaluating information to arrive at some conclusion or interpretation in solving problems.

The findings of the study show that there are only a small percentage of the questions given to the students manifesting higher-order thinking skills. The findings show that a lot more questions require students to manipulate their low-order thinking skills, at the level of recalling facts and information. This means that the students face more questions which do not train them to be more critical and analytical. The fact even shows that only one teacher out of the five English teachers involved in the study gave questions at the evaluation level of Bloom's cognitive domain.

As a complex process, reading should not be seen as a linear progression of Bloom's taxonomy. In the reading process, students should be trained to jump between various levels of thinking; thus, training them to create meaning as a result of the negotiation between their schemata, the nature of the texts, the writers' message, and other features of reading. This means that an in depth consideration should be taken to provide students with various questions which require the manipulation of all levels of thinking.

References

- Edwards, M. Craig, and Gary E. Briers. 2009. *Higher-Order Thinking Versus Lower-Order Thinking Skills: Does School-Day Scheduling Pattern Influence Achievement at Different Levels of Learning?* Available: <http://pubs.aged.tamu.edu/jsaer/pdf/vol50/50-00-015.pdf> , accessed: 22/7/2009
- Dikmenum Homepage. *Kurikulum Tingkat Satuan Pendidikan*. Available: www.dikmenum.go.id. Accessed: 5/8/2009.
- Grabe, W. 1991. *Current Developments in Second Language Reading Research*. *TESOL Quarterly*, 25:375-406.
- Gronlund, Norman E. 1985. *Measurement and Evaluation in Teaching*. New York: Macmillan Publishing Company
- Landmark College (Homepage of Landmark College. 2009. *Reading Comprehension Overview*. http://www.landmark.edu/institute/assissstive_technology/reading_ov... accessed: 7/16/2009.
- Michael. 2000. *Comprehension Instruction: What Makes Sense Now, What Might Make Sense Soon*, *Online – Articles: Comprehension Instruction*. Available: <http://www.readingonline.org/articles/handbook/pressley/index.htm>, accessed: 7/16/2009
- . 2009. *Higher-order thinking: Are students using higher order thinking operations within a critical framework?* Available:

<http://education.qld.gov.au/corporate/newbasics/html/pedagogies/int...>, accessed 7/21/2009.

----, 2009. Bloom's , taxonomy - learning domains: *Benjamin Bloom's Taxonomy of Learning Domains - Cognitive, Affective, Psychomotor Domains - design and evaluation toolkit for training and learning*. Available: <http://www.businessballs.com/bloomstaxonomyoflearningdomains.htm>, accessed 6/5/2009.

Nunan, David, ed. 2003. *Practical English Language Teaching*. McGraw-Hill Companies Pressley