

Incorporating Higher Order Thinking Skills in Developing Reading Materials and Tasks for EFL Learners

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Abstract: This study aims to develop English Reading Materials with orientation to Higher Order Thinking Skills (HOTS) for EFL learners. This is motivated by the fact that knowledge and skill learned through higher-order thinking processes are remembered longer and more clearly than the information that is processed through lower-order thinking processes. Strengthening of familiarizing the development of high-order thinking skills (HOTS) is an aspect of transforming the 21st century learning. Some reading materials for higher education still tend to be oriented towards developing Lower Order Thinking Skills (LOTS) by emphasizing the remembering and understanding skills. Those reading materials have not oriented towards developing HOTS aspects, such as: analyzing, evaluating and creating skills. Researcher conducted need analysis to get some basic information. This information was needed to support the designing process of reading materials. Questionnaire was given to the respondents. The questionnaires includes the description of the students, target needs, and learning needs for English department students. After conducting the need survey, the result of the questionnaires was analyzed by the researcher. The results of the study are as follows. First, the developed materials consist of 4 units, each unit consists of three lessons, each of which comprises 8-9 activities. Second, the development procedure is done by prioritizing the needs analysis conducted in the field. Third, the reading materials have been adjusted to the learning outcome as drafted in each unit. Fourth, the outline of the materials development use (uses) reading cycle. Fifth, the activities developed in reading materials have inserted HOTS.

Keywords: reading strategies, high order thinking skill, reading materials, reading tasks

Introduction

In academic field both formal and informal., reading plays an important role as an instrument for learning. For the higher education learners, the ability of “reading to learn” seem to be one of the basis requirements to understand the material proposed by the teachers. It is believed that the ability to read is universally considered as the most important basic academic skill (Mahmoudi, 2017). The learners read in order to learn a certain message contained in their textbooks, article, report, ect. To learn the material, they are demanded to give argumentative reasoning and make judgments of what they have read (Nation, I.S.P: 2010). It means that they need to be a critical readers to reach the goal of their learning process. Reading connect the ideas on the page to what you already know. Research has shown that better comprehension occurs when students are engaged in activities that bridge their old knowledge with the new. Therefore, students need course book which contains materials and tasks which support the students activeness.

Conceptually, reading materials should be selected on the basis of students’ needs, culture background, language level, and particular characteristics (Collie and Slater, 1994). Practically, Asian Pacific Cultural Centre for UNESCO (ACCU) (2001: 69) lists seven important elements to test before the development of materials is circulated: 1) objectives (the materials should meet the existing objectives), content (they should relevant to the students’ context and needs), 3) language and text (they should in line with the students level in terms of length and grammar, 4) visual (the materials should be attractive and help convey the messages, formats (they should be easily used or performed by students and teachers, 5) teaching learning process (it should be

performable in the available time allocation, and other element (they cover catchy and clear title as well as quality paper).

Research about strategies affecting comprehension has been studied for decades. Effective comprehension strategies have been identified by two types of research (Grabe, 2009). The first refers to a report of what good readers do while reading difficult materials (verbal self reporting). The second involves experimental studies which show the effectiveness of certain strategies through instruction (Femilia, 2015: 2). This current study is concerned with incorporating higher order thinking skills in PreCuRSOR reading instruction model. A model is understood as visualized charts that are accompanied by instructional goals, teaching steps, instructional materials, and support systems. The learning needs and learning targets are elaborated in a good performance on instructional materials as one of the component of model.

EFL reading classroom needs comprehension questions to help students read and comprehend better. Surjosuseno (1999) recommended teachers to use Bloom's Taxonomy to develop strategies in the teaching of EFL reading, especially to promote learner's critical reading, while knowledge and comprehension should be interspersed among the questions, activities, and evaluation tasks.

Anderson (2008: 87) states there are four levels of comprehension.

1) Literal (reading in the lines)

Literal comprehension refers to the idea and fact that are directly stated at printed pages. The literal level of comprehension is fundamental to all reading skills at any level because a reader must first understand what the writer said before he can draw inference and make evaluation.

2) Inferential (reading between the lines)

This category demands a higher level of thinking ability because the questions of interpretation are concern with answer that is not directly stated in the text but they are suggested or implied. To answer question in the interpretative level, reader must have ability and able to work at various level of abstraction.

3) Critical (reading beyond the lines).

Critical reading is evaluating written material comparing the ideas discovered in the text with known standards and drawing conclusion about their accuracy, appropriateness, and timelines. In this level reader must be an active reader questioning, searching for fact, and suspending judgment until she or he has considered all the materials.

4) Creative (reading beyond the lines).

Creative reading uses different thinking skills to go beyond the literal comprehension, interpretation, and critical reading level. In creative reading, the reader try to come up with new or alternate solutions to this presented by the writer. The ability to apply information and respond emotionally.

Based on the explanation of the level of comprehension, in this research measure for critical or evaluation comprehension level. Critical reading is the high level of reading comprehension. Based on the Crawley and Mountain's (1995) hierarchy of reading comprehension, critical reading occurs after literal and inferential comprehensions are mastered. The critical readers have an ability to evaluate the writer's idea based on their own experiences. They decide of how to react to the text emotionally and intellectually. It can be inferred that critical reading is high level of reading which needs the high order level of thinking. Critical reading employes the high order level of thinking that is analysing and evaluating. Therefore, the adaptation is needed to add the level of cognition of creating. Otherwise, it means that literal reading employs the lowest level order of thinking that is remembering. This, the construct of reading comprehension in terms of Bloom taxonomy which was proposed by Crawley & Montain (1995), and Bareete's (2015) can be transformed into the Bloom taxonomy: six levels cognition, which is illustrated as follows:

Table 1: Level of Comprehension and Bloom’s Taxonomy in Reading Comprehension

No	Crawley and Montain’s Taxonomy	Barrete’s Taxonomy	Bloom’s Taxonomy
1.	Creative	Appreciation	6. Creating
2.	Critical	Evaluation	5. Evaluating
3.	Inferential	Inferential	4. Analyzing
			3. Applying
4.	Literal	Literal	2. Understanding
			1. Remembering

Several opinions related to sub skills in critical reading exist. Critical reading is defined as high level comprehension of written material requiring interpretation and evaluation skills (Grellet, F, 2003). According to Pirozzi, critical reading enables the readers to separate important information from unimportant information, to distinguish between facts and opinions, and to determine a writer’s purpose and tone, as well as to use inference. Meanwhile, considering that critical reading can be measured through the cognition level of analyzing, evaluating, and represent those skills while reading. The ability of analyzing can be shown through examining and breaking information into parts by identifying motives or causes, making inferences and finding evidence to support generalizations. Evaluating appears through the activity of presenting and defending opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria. Then, creating will demand the readers to be able to compile information together in a different way by combining elements in a new pattern or proposing alternative solutions. Thus we can conclude that having good higher order level of thinking skills can facilitate a reader to conduct critical reading.

Femilia (2015: 3) states in relevance to Bloom Taxonomy, high-level thinking skills is a kind of meta-cognitive as a part of high order thinking skills. Mc Loughlin and Luca (2011) states that HOTS means the capacity to go beyond the information given, to adopt a critical stance, to evaluate, to have meta cognitive awareness and problem solving capacities.

Moreover, Newman and Wehlage (2011) stated that “HOT requires students to manipulate information and ideas in ways to transform meaning”. When students combine facts and ideas in order to analyze, evaluate, generalize, or arrive at some conclusion or interpretation, students will learn more deeply. Students will understand the concept better. The students are also able to demonstrate their understand well and deeply. Through high order thinking skills students can distinguish ideas clearly, argue well, construct explanation, understand complex things become clearer.

Due to the background, the objective of this study was to develop reading materials and tasks employed higher order thinking skill and reading strategies shown in that model developed.

This study elaborated several activities that are proposed Carla (1997), Friez (2003), and Sugirin (2003). Based on those three points of views, the subskills measured in this study are activating prior knowledge, cultivating vocabularies, raising awareness of strategy used, including: separating important information from unimportant information, making inferences, distinguishing between facts an opinion, making judgment about the information.

Method

The researchers used Research and Development as the method of the research by adapting Borg and Gall, Dick & Carey, and Latief. The researcher adapted those three models and modified some designs to meet the real condition in the field research and for the sake practicability. The researcher only chose six steps considering those stages could cover the needed data to be processed into final product according to the level of effectiveness. The model of development that the researcher used are: (1) research and information collecting, (2) developing the product, (3) experts' validation, (4) try out, (5) final product, and (6) product dissemination. Revisions were integrated in the process of expert validation and after having product tried out.

The data were collected by two phases (1) Need analysis, and (2) Field testing. Need analysis consisted of observation, questionnaire, in-depth interview, and validation sheet. Meanwhile, field testing consisted of observation, test and documentation, lecturer's evaluation sheet, student's evaluation sheet, and in-depth interview. The data were analyzed both quantitatively and qualitatively.

Result and Discussion

Need analysis is a procedure that must be done by researchers when will produce research and development products. Nation and Macalister (2010: 24) takes into account three aspects: the aspects of necessities, the lacks, and wants. In this research, need analysis involves through questionnaire and interview. The questionnaire for target needs and learning needs is distributed to students and the interview is conducted to the lectures.

Researcher conducted need analysis to get some basic informations. This information was needed to support the designing process of reading materials. A questionnaire was given to the respondents. The questionnaire includes the description of the students, target needs, and learning needs for English department students. After conducting the need survey, the result of the questionnaire was analyzed by the researcher.

Target needs are very much the surface needs or the surface representations of the needs of the students have. The result of the computation shows that students want the topic in the learning material is about the current issues about social, science, and technology. They think that grammar in learning activities is fairly important. There four genres of text that they want: recount, descriptive, explanation, and analytical exposition.

The learning needs is focus on what the learners will have to do to those target needs. The results of computation shows that most of the students choose the historical dan bibliographical. It will be suitable in the unit that learn about recount. The activities that most student chose is finding the main idea of a text. A significance result also showed at the choices of reading activities, more half of the students choose inserting higher order thinking skills. According to the data, the students tend to like summarizing activity to enrich their vocabulary and their logical thinking. Then, forty percent students want make graphic organizers for presenting their understanding. In the length of the text, students chose 2-3 pages includes the activities. Forty five percent of the students think will be better in working in a group. About visual media, fifty percent of students answer that it is important. The last questions about the cultural value, the students' thought that it is very important to add cultural values to the materials. In conclusion, the students needed sets of reading materials to help them understand text, develop their critical thinking, and enrich their vocabularies. Therefore, they needed reading materials that provided the explanation about learning strategy and learning activities inserting higher order thinking skills.

After conducting needs analysis, the researcher then write the course design. The course design covered the the language areas and knowledge which the learners had to learn. It was the guideline in developing the materials. The course grid consists of unit, lesson (topic), learning outcome, indicator, learning material, and learning activities. The learning material contains text title, function of text, language features, vocabularies, and text organization. The learning activities contains six steps of ACuRSOR model: activating prior knowledge, cultivating

vocabularies, raising awareness of strategy used, summarizing, organizing graphically, and reflecting. There are four units, recount, descriptive, explanation, and analytical exposition.

In reference to the above findings, it is clear that students have good orientation and high expectation for having reading materials which contains relevant topics, elaborating reading strategies and inserting high-order thinking skills in reading activities. It is relevant with Margana (2016) that the development of HOTS as performed in every task should become the main concern on the grounds that it could enhance the critical thinking of students which serves as the basis of establishing students' creativity and self regulated learning on the part of students.

Higher-order thinking skills is a concept of education reform based on the taxonomies (such as Bloom's taxonomy). The idea is that some types of learning require more cognitive processing than others, but also have some generalized benefits. The concept concentrates on students understanding in learning process based on their own methods. The HOTS questions are able to train students to think creatively, critically, and innovatively.

Someone with critical thinking skills is able to do the following: understand the logical connection between ideas. Identify, construct and evaluate arguments detect inconsistencies and common mistakes in reasoning.

Encouraging Questions

Encouraging questioning, in order to engage all learners in the classroom, ensuring everyone has the opportunity to participate in discussions and do the important thinking when a question is posed. Teachers use a variety of questioning strategies. Practice questioning strategies with students.

Eg. Comprehension questions

- Why does the writer choose *global warming* as the topic select global warning as the topic of the text?
- Analyze the factors that can damage ozone layer!
- To stop ruining the ozone is difficult. Why?
- Analyze the reasons why using CFCs is difficult to be avoided!
- How does the writer convince that "human own action" causes destruction?

Outlining and Summarizing

Summarizing teaches students how to discern the most important ideas in a text, how to ignore irrelevant information, and how to integrate the central ideas in a meaningful way. Asking students to summarize improves their understanding for what is read and the organizational structure of text, allows both students and teachers to monitor comprehension of material. David (2007: 56) proposes 6 summarizing strategies, namely (1) do not rewrite the original piece; (2) keep your summary short; (3) Use your own wording, (4) refer to the central and main ideas of the original piece; (5) read with who, what, when, where, why and how questions in mind, and (6) do not put in your opinion of the issue or topic discussed in the original piece.

Some teachers would just ask the students to summarize texts and then get mad at the students when they failed to produce quality summaries. That was wrong in doing this. Teacher should teach how to write summaries. Writing a good summary is not as easy as it may appear. Crown (2014: 65) mentions 5 requirements, namely: (1) **the student must read and comprehend the text**; (2) the students have already **identified main ideas and key points**, which means that they must have a good enough understanding of the text to distinguish between essential and nonessential information; (3) **finally the students should express this information in their own words**. This means that summarizing a text requires both comprehension and expression skills and it is relevant to the principles of HOTS.

Eg. Summarizing Instruction

Read each passage and...

- Create a title for the passage related to the main idea
- Accurately summarize the text
- Your summary must describe all key ideas from the text
- Do not include opinions or personal info in your summary
- Highlight or underline key ideas in each passage

Organizing Graphically

Organizing graphically means creating a graph to show classification and make notes on graphic organizer. Gregory and Caroline (2007: 19) state that organizing graphically are useful thinking tools that allow students to organize information and allow students to see their thinking. They are visual or spatial logical tools that appeals to many learners for managing and organizing information. Supporting to Gregory, Elizabeth (2003: 17) states that graphic organizer is a diagram that represent a relationship directed by a thinking skill verb. Organizing graphically has benefits in many ways, those are: (1) can be used for brainstorming at the beginning of the lesson or unit to find out what students already know' (2) to comprehend the text, reader needs to activate the cognitive process. When the readers need to predict the information from the given passage, they need to transfer the abstract concepts into ideas that are more visible. (3) to switch the information from the abstract into more visible ideas the role of cognitive process is significant. This argument is supported by Ellis (2005: 192). *Graphic organizers are effective because they show the organization or structure of concepts as well as relationship between concepts. They made it more clear to students what they are expected to do and allow students to focus on what is important.*

Ex. Organizing Graphically

You have already understood the text. Now try fo find the causes of ozone destruction and give brief explanation.

No	FACTS	OPINION
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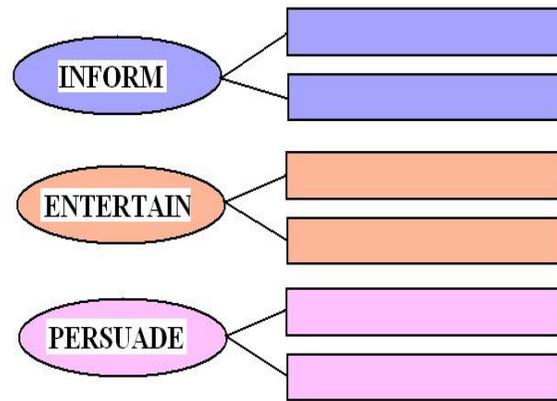


Figure 1. This figure is the example of organizing graphically

Reflecting

Reflection refers to an activity or process in which an experience is recalled, considered, and evaluated, usually in relation to a broader purpose. It is a response to past experience and involves conscious recall and examination of the experience as a basis for evaluation and decision-making and as a source for planning and action (Richard, 1990). Students reflect orally the ideas, concept, knowledge, strategy, or other information for their reading evaluation. Teachers should allow students to be aware of strategies they use while reading. Students need to be taught to ask themselves whether the strategies they are using appropriate and effective for them or not. Moreover, after having the opportunities to practice the strategies, students should be taught to evaluate the effectiveness strategies they are using.

Eg. Reflecting

At the end of this chapter, ask yourself the following questions to identify how effective your learning process has been.

1. Which learning activities did you enjoy?
2. How well can you read hortatory exposition text about Global Warming?
3. How well can you write hortatory exposition text about Global Warming?
4. How well you can ask for and give information about global warming?
5. What did you do next to learn further about hortatory text?
6. What values did you internalize from this unit?
7. What 21 century skills did you improve after learning this unit?
8. What literacy skills did you develop in this unit?
9. What higher-order thinking skills did you improve after learning this unit?

Conclusions

Based on the findings, the researcher concludes that students have good orientation and high expectation for having reading materials that contain relevant topics, elaborating reading strategies and inserting high-order thinking skills in reading activities. The key point is that teachers must teach students how to summarize texts. Summarizing a text requires both comprehension and expression skills and it is relevant to the principles of HOTS. This study is very significant for English teachers who want to teach reading since students do not only read the text and answer the question, but they are challenged to think critically and creatively. The students are given thinking freedom and evaluate themselves and the learning process at the end of the instruction.

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