

Teachers' Understanding in Constructing Higher Order Thinking-Based Assessments:

Voice from English Teachers' Experience

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Abstract—Determining instructions of higher-order thinking skills (HOTS) in the Curriculum 2013, teachers so far still meet some difficulties. One of the constraints is due to teachers' knowledge of designing HOTS assessments appropriately. As a result, this paper presents research findings on teachers' understanding of constructing HOTS assessment. A case study was done with two instruments, namely document analysis in the form of teacher-made assessments and interviews with the teachers. The participants of this study were two English teachers from different Junior High Schools- one public and private schools which have implemented the Curriculum 2013. The teachers got misconceptions about HOTS-based assessment particularly in difficulty level of the assessment materials instead of the cognitive complexity. Consequently, the assessment materials may only promote the students' HOTS especially dealing with analyzing and evaluating skills. Meanwhile, creating skills has not been constructed in the assessment. In addition, the interview results with the teachers also claimed that multiple-choices were still considered as the most appropriate assessment to measure the students' HOTS compared to essay and open-ended questions. The analysis results also showed that creating as the highest level of HOTS was mostly demonstrated in the form of written products of the students. Overall, it is concluded that the teachers' understanding of HOTS-based assessment was relatively low and needs to be improved through attending some training, workshops, and seminars.

Keywords: *assessment, Curriculum 2013, EFL learning, Higher Order Thinking Skills, teacher's understanding*

I. INTRODUCTION

Higher Order Thinking Skills as one of the main agendas in the Curriculum 2013 has been implemented by English teachers as an effort to face the challenges of 21st century [1-3]. These challenges expose students to have diversity in terms of cultures, religions, and perspectives in their society. Accordingly, they should be thoroughly prepared in appraising different situations and problems from different perspectives [2].

To set the students in facing these challenges, Higher Order Thinking Skills (HOTS) in the Curriculum 2013 brings a major

shift toward the instructional process. It transforms the concept of assessment through the policy and current practices that appeal to be discussed. Designing an alignment assessment with Higher Order Thinking principles is very crucial because students' level of thinking should be evaluated and monitored in the learning process [4]. However, some English teachers perceive this idea as a difficult task to be implemented in the classroom since they are not familiar with the content of the new curriculum [5]. It is also supported by the fact that the previous curriculum system has often been restricted to its very summative functions aiming at grading students' performance based on the last assessment [6].

Meanwhile, in the Indonesian educational context, some studies reveal that most of the teachers are less equipped with a firm understanding about higher-order thinking-based learning either in the terms of conceptual level or practice one whereas to avoid ineffective and inappropriate assessment, adequate knowledge of language assessment that fits the characteristics of higher-order thinking skills is important. Understanding and perception about higher-order thinking skills among teachers are still diverse and multi-perceptions [7]. Some Indonesian teachers assume that implementing HOTS-based skills is not a piece of cake due to some reasons. First, not all teachers understand the concept well as they are unable to distinguish HOTS as an ability, skill, learning strategy or process [8]. Some teachers also perceive that HOTS-based learning is more suitable to be implemented in science and engineering classes instead of social science and language [5]. From the perspective of experienced teachers and stakeholders, Higher Order Thinking is a skill that necessarily used to assess students in a complicated manner. The teachers take for granted that Higher Order Thinking Skills are always identified with complicated and difficult tasks which the students are required to think very hard to complete the tasks [4].

In terms of assessment, there is an excessive effort from the government to disseminate the core ideas of higher-order thinking skills to the English teachers at different levels including elementary school, junior high school, senior high school, and higher education. This is due to an awareness of many parties that mostly teaching lower-order thinking skills,

such as recalling, memorizing, and understanding the content without further exposing them to higher-order thinking skills [5].

Further investigations have been done by some scholars to identify the implementation of higher-order thinking skills in assessing EFL learning. Some teachers struggle to write higher-order thinking questions that are appropriate and suitable in their subject context as discussed by some previous studies [9]. A study conducted by Lailly and Wisudawati found that higher-order thinking skills are not well integrated into the national examination of the chemical subject at which most of the items are stuck in the level of applying the skill. Evaluative skill and creative skill, on the other hand, did not realize very well by the teachers in the classroom [10]. The findings show that only a few percent out of the total items in teacher-made assessments can promote students' higher-order thinking skills since some of them merely requires students to recall their understanding [11].

Since these studies focused on the HOTS assessment in science subjects, this paper aims to examine assessment constructed by English teachers which follows the principles of higher-order thinking skills. In detail, this study also purposes to present teachers' voices in constructing HOTS based assessments in the EFL learning context.

II. METHODS

This study employed a qualitative method with a case study as the research design. A descriptive-qualitative method was applied due to several reasons. First, it attempts to provide a holistic description of complex phenomena [12] as this study aims to analyze, describe, and interpret the data in the form of test items in the teacher-made assessment and their voices in designing those items by following the principles of higher-order thinking skills. Second, the researcher acts as the main instrument in collecting data by interviewing the teachers and examining documents in the form of test items involved in teacher-made assessments.

A case study was conducted to get an in-depth exploration of test items observed in the teacher-made assessments. It limits the case into a specific participant in which the teachers involved are considered as experienced-teachers who already integrate higher-order thinking skills in their classrooms. The main purpose of narrowing the participants is focusing the study on investigating teachers' experience and consideration about designing higher-order thinking assessment so that the teachers' prior knowledge about higher-order thinking skills is significant.

This study involved two English teachers from different Junior High Schools in Bandung. Regarding the selected research design, the selection of participants was done by considering several teachers' qualifications. First, the English teachers already attend training, seminars, or workshops about higher-order thinking skills especially in constructing higher-order thinking-based assessments either programs held by the government, school, or other institutions. Second, the teachers should have been aware of the urgency of integrating thinking

skills in the learning process reflected by their efforts to select teaching strategies that may promote students' critical thinking in English classrooms proved by their experiences in doing action research related to the promotion of thinking skills.

In terms of data collection, two research instruments were employed to collect the data, namely document, and interview with the teacher. Documents were considered as the main instrument to collect the data focusing on investigating teacher-made assessments regarding principles and characteristics of higher-order thinking skills assessment. It was used to gain information about the extent to which the teacher-made assessment meets the criteria of higher-order thinking principles. The documents were produced by the English teachers and used as the assessment to measure their students' achievements. The second instrument used to collect the data was the interview with the teachers. The interview is considered as a valuable instrument to dig the information about teachers' experience in constructing higher-order thinking-based assessments whether the processes are in line with experts' suggestions and a guideline for designing higher-order thinking assessments provided by The Ministry of Education and Culture [1]. The interview also aimed at confirming the data obtained from document analysis and to support the validity.

Having been attained, the data then were categorized into some categories, such as prior knowledge, experience, and evaluation. Participants' prior knowledge related to higher-order thinking skills and assessment were identified to make sure that the teacher already has an initial understanding of higher-order thinking skills through some programs from government or other institutions. The teachers' understanding was compared to experts' statements about principles of higher-order thinking skills including its components covering stimulus, novelty, being contextualization, and complexity of thinking [1,4,9]. In the end, the researcher analyzed deeply to get information about the participants' experience in designing higher-order thinking assessments for their students. The interview questions also dealt with reflection in which some teachers elaborated on some challenges faced in the process of designing HOTS-based assessments.

III. FINDINGS AND DISCUSSION

The findings gained from the document analysis and interview with the teachers revealed that the teachers have fulfilled the principles of higher-order thinking skills assessment in some points including the availability of stimulus, novelty, being contextual, and thinking-based questions proposed by Brookhart [9] and Widana [1]. Each aspect was implemented by the teachers in different ratios as seen from the indicators related to the teachers' understanding in designing higher-order thinking skills-based assessments. These principles were also confirmed by the teachers' statements gained from the interview. The test items in the teacher-made assessments have met higher-order thinking skills assessment principles as can be seen in the following table:

TABLE I. THE PRINCIPLES OF HIGHER-ORDER THINKING SKILLS IN TEACHER MADE ASSESSMENT

HOTS Assessment Aspects	Numbers of items in teacher-made assessment 1	Numbers of items in teacher-made assessment 2
The test items provide stimulus/introductory materials	45/45	50/50
The test items use renewed material that is never done by students previously	45/45	50/50
The given stimuli relate to students' real life	42/45	50/50
The test items use thinking-based question The questions use implied answers The questions promote associating skills The questions promote cognitive reasoning	33/45 13/45 13/45	41/50 21/50 3/50

From the table 1 above, the fulfillment of the higher-order thinking skills-based assessment can be explained in different perspectives. First, the availability of stimulus reveals almost all test items presented by the teachers. The stimulus is presented in various forms including texts, dialogues, pictures, tables, and graphs. In terms of text types used in the teacher-made assessment, functional texts tend to dominate numbers of stimulus compared to transactional and monologue texts in the teacher assessment. Most of the functional texts are drawn from texts found in daily life such as announcements, advertisements, and short messages around their surroundings.

On the other hand, transactional texts are presented in the form of short dialogues aimed at showing several expressions in daily communications such as asking for help, making apologize, thanking, or making an appointment. While monologue texts in the test are in the form of a descriptive, narrative, and procedural text. These texts are designed based on the text types that should be taught to the students as stated in basic competence (KD) for Junior High School students.

Regarding the quality of the teachers' questioning in assessment, the teaches-made questions can achieve the level of analyzing, evaluating, and creating. Among three levels of those cognitive skills, analyzing seems to dominate the numbers of higher-order thinking questions followed by evaluating and creating level which takes a small portion of the total items in both teacher-made assessments. The following table presents the examples of teachers-made questions depending on the cognitive level:

TABLE II. EXAMPLES OF TEACHERS' QUESTIONS IN DIFFERENT COGNITIVE LEVELS

Level of questions	Teacher Questions	Aims of the Questions
Analyzing	What is Jane's main intention to write the message? By reading the text, it is hoped people will..... What is the dialogue about?	Students should be able to get the main point of something. In this case, students should understand the components in the text and interpret the authors' intentions.
Evaluating	From the text, we know that The Bedouins....	Students should be able to evaluate the value of something. In this case, students should give their comments about characters in a narrative text.
Creating	What will possibly the passengers do after reading the announcement? What is the plate used for?	Students should be able to generate new ideas by predicting content that is not written in the given text or materials.

The above 2 table (table 1 and table 2) provides the fact that teachers-made questions are directed to achieve the goals of higher-order thinking questions that require students not only to remember information but also to manipulate the information through associating, interpreting, evaluating, commenting, and predicting information. This is in line with the understanding of the teachers obtained from the interview showing that HOTS hinder students from remembering information easily from stimulus to the options. Both teachers claim that the questions are expected to drive students to think analytically, identify the problems, comparing and contrasting data, and conclude to decide as explained in the following interview scripts:

To answer higher-order thinking questions, students have to analyze and involve their thinking in problem offered in the stimulus after that they may make a conclusion and try to choose the most relevant answer with given contexts or the most rational one with daily life context among plausible alternatives given in the options.

(Interview with the teacher B, May, 2019)

In addition, the teachers also viewed the level of cognitive complexity in higher-order thinking questions different from the difficulty of tasks. They mentioned that higher-order thinking skills-based questions cannot be assumed as a hard question to answer contrastively. It can be an easy question for students to respond since they enjoyed associating their prior knowledge and experience to respond to it. Such belief and concept and obtained by the teachers from several seminars and workshops they join. It is also proved by their experience in their classroom where they found the main idea of higher-order thinking skills which emphasize on the ability of the students to analyze, associate, evaluate, and manipulate information.

However, teacher A added that it is still important to pay attention to the difficulty level of the questions. She claimed that the teacher should guide students to think at higher levels. The strategy that can be followed is starting from the easiest to

the highest one. This is in line with the idea of Brookhart [9] who highlights that higher-order thinking questions can be either easy or hard for students depending on the degree of complexity created by the teachers. It is clearly stated by the teacher as presented in the following script:

Higher-order thinking questions do not always need to be difficult. If we provide complete stimuli and help students with clear guidance, it can be a scaffold for them to achieve a higher level of thinking. It can be possible to set up higher-order thinking questions based on its degree of complexity into easy, medium, and difficult. So that, higher-order thinking questions can be easy or difficult

(Interview with teacher A, April, 2019)

Considering the findings obtained through document analysis and interview with the teachers, generally, the teachers have implemented the principle of thinking-based questions which manages cognitive complexity and difficulty separately as proposed by Brookhart [9].

IV. CONCLUSIONS

In the light of higher-order thinking assessment principles conducted by the teachers in assessing students, it indicated that teacher-made assessments have fulfilled the principles of higher-order thinking assessments as proposed by Brookhart [9] and Widana [1]. It encompasses the availability of stimulus, being novel, contextual, and thinking-based questions.

Almost all test items in the teacher-made assessments provide a stimulus consisting of information used to be resource materials for students to answer the questions. Even so, some stimulus seemed not effectively functioned to encourage students' higher-order thinking skills due to the absence of a case or problem offered in the stimulus. It is not yet recognized well by the teachers since they preferred to focus on the instructions and distractors in multiple choices as the device to stimulate students' higher-order thinking skills.

Both teachers also claimed that they did not use familiar questions in their assessment which indicates that the questions were possible to avoid students from recalling information from their memory. The teachers believed that the principle of a novel in higher-order thinking skills assessment was an effort to provide renewed materials that students never worked on before.

Lastly, in designing higher-order thinking skills-based assessments, the teachers created the tasks contextually which can be done by the teachers through integrating local culture and current social issues in test materials. It aims to embrace students' prior knowledge and experience in their real life in the process of thinking.

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