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EFL teachers' attitudes and competence in developing HOTS-based formative assessment

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Nowadays, Higher Order Thinking Skills (HOTS) have been a current trend among teachers and researchers. However, there are still a few researchers who investigate HOTS and connect it with language assessment. This case study aimed to examine Indonesian English teachers' attitudes concerning the use of the HOTS-based assessment. This research has been qualitatively conducted to analyze the attitudes towards utilizing the paradigm of HOTS in the creation of good language assessment. The data of this study were collected by using an interview and questionnaire. There are 20 teachers taking part in the study who were purposely selected based on their experience and comprehension of the study's issue. The data of this study were analyzed by using descriptive qualitative. This study revealed that despite several situational constraints, all respondents shared their positive attitude to the principles of HOTS owing to several aspects. Despite the teachers' positive attitude towards implementing HOTS-based assessment, there was still a lack of knowledge about HOTS. This study suggested that more researchers portrayed teachers' competence in developing based assessment in English subject since HOTS is essential in implementing the 2013 curriculum.

Keywords: teachers' attitudes, HOTS-based assessment, formative assessment

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INTRODUCTION

The rapid growth in the 21st century requires individuals to master particular skills, precisely 21st-century skills, to compete globally. As suggested in the "P21 Framework" for 21st-century learning, which numerous stakeholders imagined, qualifications necessary for this century vary from the core subject to innovation, technological skills, to social skills (P21 Framework Definitions, 2015). The students sitting in classrooms are too different and demanding than in previous decades (Koh et al., 2015). These millennial and the next generations demand life skills, real-life experiences, application-orientedness, and engagement to help them in this dynamic and robust workplace. Besides possessing excellent content knowledge, individuals must own the demanded skills like decision making, collaborative problem solving, prioritizing, strategizing, and making innovative and creative ideas (Mishra & Kotecha, 2016). Current students demand those skills because they will be the following human resources for the workforce of the 21st century.

Consequently, schools have to embrace the need to instill HOTS (hereafter HOTS) to prepare the 21st-century workforce since the current schools do not produce a robot that can only remember, recall, understand, and apply the routine steps of main activities (Kadir, 2017). Still, they must create flexible and adaptive human resources that think non-routine or out of the box (Shepard, 2019).

In education, assessment is one of the most crucial components (Köksal & Ulum, 2018). Teachers' assessment is supposed to promote the development of students' HOTS, creativity, and autonomy to accomplish different obstacles relevant to their teaching materials (Wilson & Narasuman, 2020). In other words, the provided assessment should not stop calling up the memorized data or LOTS that aims to stimulate and develop students' HOTS. As a result, they will be ready to face global challenges. The tremendous demand in education to develop the current assessments that aim at HOTS has been confirmed by some scholars (Kamarulzaman & Kamarulzaman, 2016; Wilson & Narasuman, 2020). The scholars stated that it is necessary for a person to face the 21st-century challenge. What's more, it is confirmed by Ahmad (2016), Pretorius et al. (2017), Putra and Abdullah (2019), who asserted that the teachers of any study field need to qualify their students to be professionals based on their field of study. Therefore, there are frequent calls for educational institutions to develop students HOTS through the teaching and learning process and assessment (Mainali, 2012; Schulz & Fitzpatrick, 2016). Due to this issue, a satisfactory assessment is required.

The urgency of integrating HOTS in the teaching-learning and assessment process is also reinforced by the "Programme for International Student Assessment" (PISA) and "Trends in International Mathematics and Science Study" (TIMSS) in which reported that there is a low level of reading, mathematical, and science literacy of learners in Indonesia" (OECD, 2018). Following the evidence, the Indonesian government expected teachers to supply students with HOTS-based assessments appropriate to Bloom's taxonomy (Permendikbud, 2019). Teachers' assessment is supposed to promote HOTS, so the students would meet employee's qualifications or other professional expectations once they are graduated since the condition will prepare them in the competitive era. In an optimal scenario, teachers should supply students with HOTS-based assessments appropriate to Bloom's taxonomy (Permendikbud, 2019).

The current curriculum, 2013 curriculum, has adapted the current taxonomy version of Bloom's revised taxonomy (Anderson & Krathwohl, 2001). The taxonomy is the most widely recognized category to assess thinking skills in education (Singh & Shaari, 2019). Taxonomy is assumed to be beneficial for test items developers to align their questions with the syllabus and learning goals (Krathwohl, 2002). Enacting the six proficiency levels in Bloom's revised taxonomy, the objective of Indonesia's 2013 curriculum is to prepare Indonesians to become religious, productive, creative, innovative, and passionate people who can contribute to communities, nations, and the world's civilizations (Permendikbud, 2013). Anderson and Krathwohl (2001) released Bloom's revised Taxonomy in 2001. The most significant difference between the original and new versions of Bloom's taxonomy is that the new version has two dimensions: knowledge and cognitive dimensions (Anderson & Krathwohl, 2001). The first three levels of skills are classified as "lower-order thinking skills (LOTS)," while the remaining three are referred to as "higher-order thinking skills (HOTS)" (Brookhart, 2010). Mishra & Kotecha (2016) claim Bloom's revised taxonomy as a reference point to HOTS. Bloom's revised taxonomy can be illustrated in Figure 1:

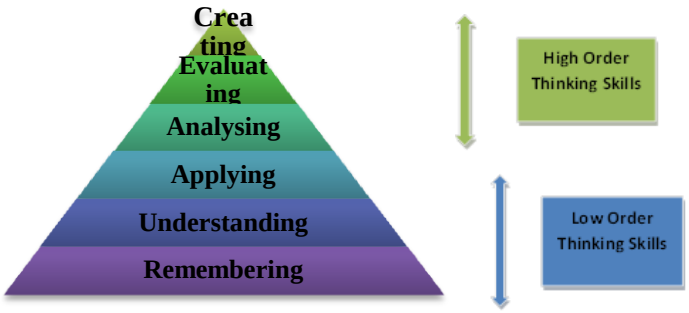

FIGURE 1 | Bloom's revised taxonomy (Mishra & Kotecha, 2016)

In the revised edition of Bloom's taxonomy, thinking skills from lower-order thinking skills to higher-order thinking skills are as follows (Anderson & Krathwohl, 2001). First is "remembering," which refers to the capability to recall specific information from long-term memory. Second, it is "understanding" that includes the ability to construct concepts derived from oral, written, and visual communication, often known as instructional messages. Third, "applying" means the capacity to implement or perform a specific procedure to overcome obstacles and employ knowledge in actual circumstances. Moreover, "analyzing" requires the opportunity to break down a particular issue into its constituent elements and decide how such parts are tied to each other. Furthermore, it is "evaluating" the skill to make judgments based on the current relevant requirements and standards. The last is "creating," which can make coherent information and reorganize the components into a new pattern or structure.

Other than the essence and function of HOTS, to apply this framework proficiently to produce a good language assessment, it is crucial to examine the teachers' attitude towards HOTS, especially HOTS-based assessment. It is essential to investigate the attitude as it is the main factor that endorses the actions and affects teachers' decision making. Marcinkowski and Reid (2019) interpreted attitude as the way people react to their situations or surrounding. Then, their reaction corresponds to the tendency to deliver which actions that they must use. Furthermore, the attitude means psychological predisposition shown by rating a specific entity with some degree of allowing or disallow Eagly and Chaiken (1993). The attitude is a person's tendency to react consistently to the object attitude based on the situation. It commonly specifies a lasting organization of

cognitions and convictions, equipped with an emotional charge to allow or against a defined object, cultivating a consistent action with cognitions and emotions related to the object (Prati et al., 2017). Attitude certainly plays a significant role in initiating a decision-making process. For example, a person who has an attitude tends to decide the reaction of action toward something or a situation. In conclusion, addressed to the meaning of attitudes, it could be concluded that attitude means the individual's tendency to show or deliver behavior. The tendency is obtained from his evaluation of the object or situation.

Typically, many research provided techniques related to how someone's attitude can be studied—the first technique proposed by the earliest experts, Thurstone and Chave (1929). For the researchers who want to learn about human attitude, the scholars provided five techniques, including "equal appearing interval, method of summated rating, social distance scale, cumulative scaling method, and the scale discriminating technique" (Thurstone & Chave, 1929). The second is the technique offered by Edwards (1957) in which someone's attitude can be measured by the term "method of absolute ranking" that is in the case of each statement or question on the scale, the respondent has to determine the degree of attitude without regard to another item. The most popular model that researchers frequently used to measure attitude is the model proposed by Eagly and Chaiken (1993) in which identifies attitude into three aspects, namely Affective, Behavior, and Cognitive. The affective aspect relates to the feeling or emotion a person has about the attitude object. It depicts agreeable to disagreeable feelings such as like or dislike, feelings and emotions, and physiological reactions (Gould et al., 2019). Behavior concerns with feelings or emotions a person has about the attitude object. It signifies personal action tendencies in regards to a willingness to do something or not based on situations. Cognitive requires the attitude object from the person's view or knowledge. The cognitive affects attractive to unattractive qualities in which the characteristics of the object and relationships of the object with others influence the attitude.

In this research, the concept of attitude is examined from the teachers' point of view using the model suggested by Eagly and Chaiken (1993), the "ABC" model. The researchers observed teachers' attitudes into the HOTS framework to adequately assess the learning process's output. The teachers' tendency to use the HOTS framework will reveal their cognitive, affective, and conative evaluation of HOTS. Concerning the importance of HOTS in this 21st century and teachers' tendency towards an effective language assessment, the effort to do this research is considered essential in the field that can serve valuable information that could become an insight into the improvement of language learning assessment.

Although there is an urgent need for HOTS-based assessment in this current era, there are still several problems with implementing HOTS in teaching-learning practices, especially in language assessment (Hashim et al., 2017). Despite the significance of HOTS, in Indonesia, the level of teachers' understanding of the HOTS concept in teaching and learning activity and assessment are still low (Utami et al., 2019). Then, many research investigates textbooks, especially for senior high school students concerning HOTS and LOTS questions during the last decades using content analysis based on Bloom's taxonomy (Anasy, 2016; Atiullah et al., 2019; Köksal & Ulum, 2018; Susandari et al., 2020). They revealed that the distribution of HOTS questions in senior high school textbooks is lesser than LOTS. The reality indicates that EFL instructors also find it challenging to construct HOTS-based questions, which would significantly affect the assessment phase of the teaching-learning process. Educators are the critical contributors to the success of a particular school or education system (Barnett & Francis, 2012; Jannah, 2018). EFL teachers should be able to encourage their learners to the HOT by delivering HOTS-based questions. Teachers should provide an adequate assessment that covers various cognitive levels to measure students' distinctive abilities. The excellent and suitable assessment should not only assess students Lower Order Thinking Skills. To find a solution to this issue, teachers should promote functional assessment tools to assess students' learning capabilities and critical thinking skills based on the six stages of Bloom's taxonomy.

Even though HOTS has become a popular topic for teachers and investigators in education, there is still little research related to language learning assessment, mainly based on the teachers' points of view. Based on the issues, this research aimed to examine the attitudes of English teachers, especially English teachers in various senior high schools in East Java, while using the framework of HOTS in language assessment. This research is seen as further research from some previous related studies. The main difference is from the study sample that is English teachers in various senior high schools. A good attitude and excellent competence in developing HOTS-based assessments are essential to achieve the goal of the 2013 curriculum. Further, the teachers' competencies in developing HOTS-based assessments were also uncovered in this research. This research is relevant to the current curriculum since, in the newest Indonesian curriculum that is in the 2013 curriculum, teachers are demanded to have the ability to construct HOTS-based assessments to prepare and educate students to be able to face global challenges. Thus, this study is essential to provide some insight to promote HOTS in teaching and learning activities, especially in language assessment. There are two research questions in this study:

(1) How is the teacher's attitude in developing HOTS-based assessment?
(2) How is teachers' competence in developing HOTS-based assessment?

METHODS

Research Design

The design of this study is a survey study that is aimed to provide in-depth information about the teacher's attitude and

competence in developing HOTS-based assessment. Because of the "complexity of the setting and the diversity of its participants", Yin (2016) suggested that qualitative study incorporates "collecting, integrating, and presenting data from a variety of sources". In light of this suggestion, the researchers gathered information from respondents by undertaking interviews and analyzing the teacher's questions items. This type of study yields the comprehensive data required to understand teachers' attitudes and competence towards HOTS-based assessment.

TABLE 1 | Demograhics Information of the Sample

No.	Types of school	Gender				Years of Teaching	Degree				N
		M		F			Bachelor		Master		
		n	%	n	%	X	n	%	n	%	
	Under the Ministry of Education										
1.	State Senior High School	2	10	4	20	10	5	25	1	5	6
2.	Private Senior High School	4	20	3	15	8	7	35	0	0	7
3.	State and Private Senior Vocational High School	2	10	2	10	6	4	20	0	0	4
	Under the Ministry of Religious Affairs										
4.	State or Private Senior High School	1	5	2	10	3	3	15	0	0	3
	Total										20

Note:
number of participants in each type of school;
% : percentage;
N : The total of the participants
M : Male;
F : Female;

Merriam and Tisdell (2016) claimed that there is no standard fixed sample size for qualitative research. It relies on an "adequate number of participants" required to find the research questions' answers (Merriam & Tisdell, 2016). They proposed that the sample size depends on achieving saturation in the findings and interview responses; thus, the sample size should be based on the data obtained during the research. The sample size of 20 participants allowed the investigator to collect in-depth data and achieve saturated data (Patton, 2015). Data saturation means that the author gathered no additional information from the participants' responses to answer the research questions (Merriam & Tisdell, 2016). The researchers took a sample size of 20 respondents. They were enough to achieve the rich and thick data for the research to be useful for school leaders to make decisions to promote the consistent use of the HOTS-based formative assessment. The participants of this study coded as T1, T2, T3, T4, …T20 to fulfill the research ethic of research or, in other words, to protect the respondents' identity.

Instrument and Research Procedures

The researchers used a semi-structured interview to ask the formal series of questions to answer the first research question related to teachers' attitudes in developing HOTS-based questions. The researchers employed more open-ended questions, enabled a discussion instead of strictly ask a formalized list of questions to the interviewee

Respondent

There are 20 English teachers from different senior high schools in East Java of Indonesia consciously engaged to be the participants in this research. This study used a purposive sampling technique to gather rich data to answer the research questions (Merriam & Tisdell, 2016; Patton, 2015). The researchers chose heterogeneous participants in which the researchers chose participants who work in four types of schools, participants from both genders, teachers from various senior high schools, and teachers with both bachelor and master degrees to seek comprehensive data. The demographics information of the participants of this study can be seen in Table 1:

(Creswell, 2012; Merriam & Tisdell, 2016). It was agreed as it allows some freedom for the researchers and the participants to over predetermined questions while maintaining the research's main focus (Merriam & Tisdell, 2016; Patton, 2015). Then, the researchers also administered a questionnaire to the participants. The researchers used a close-ended questionnaire to support the data. The questionnaires used in this study were created and adapted to the idea of attitude proposed by Eagly and Chaiken (1993) as also used by the previous research (Siregar & Amalia, 2019). The questionnaires have three scopes, and they are used to analyze teachers' attitudes towards HOTS regarding affective, behavior, and cognitive. Participants were asked to select "yes/no" from a different set of predetermined statements (Creswell, 2012).

The surveys were distributed via google form to the respondents since using this method, a large amount of data can be collected in a short time from many participants. It took less than 30 minutes to finish the questionnaires and submitted them back in a few days. The data obtained were used as secondary data and employed to confirm the first data from the interview. There are 35 items categorized into three elements based on the attitude model suggested by Eagly and Chaiken (1993), they are affective, behavior, and cognitive. Besides, in the present research, it must be known that to examine if there are any modifications required in the questionnaire's statements and to ensure that all of the

questionnaire statements were easy enough for respondents to comprehend, the questionnaires were consulted to the advanced colleagues to provide more valid, reliable, and credible data. Moreover, the researchers also used formative assessment developed by English teachers in 2020 to analyze their competence regarding HOTS. There are 25 questions of each teacher to be analyzed in this study.

Data Analysis

The researchers analyzed the data from the interview first, then analyzed the questionnaire's data, whose result was used to support the first data. The stage is an essential step that is called triangulation (Patton, 2015). It was meant to attain an accurate credibility degree in this study. In this recent study, the researchers will code the data from the interview manually since it seems a more reasonable method to eliminate errors and inaccuracy. Then, to analyze the data from the questionnaire, the researchers calculated the percentage of the participants' answers to know the percentage of yes and no responses in each item. The content analysis method was also used to analyze the thinking skills represented on the question's items developed by teachers. The question items were analyzed by using Bloom's revised Taxonomy in which "remembering," "understanding," and "applying" questions are categorized into LOTS, and "analyzing," "evaluating," and "creating" questions are classified into HOTS.

RESULTS AND DISCUSSION

Teachers' Attitude in Developing HOTS-based Assessment

This part presents some gathered findings that widen the orientation compatible with this research's focus regarding English teachers' attitudes into HOTS to prepare the effective assessment. Eagly and Chaiken (1993) mentioned that the attitude model could be divided into three indicators: affective, behavior, and cognitive. The details are explained in some parts, namely English teachers' attitudes towards HOTS presented in Table 2, including a statement of the questionnaire, percentage (%), and the total of participants. The finding also supported by the results of the interview with the participants as follows.

TABLE 2 | Teachers' Attitudes in Developing HOTS-based Assessment

	Statement	%	n
	Affective		
1.	I favor the concept of HOTS being infused into the Indonesian curriculum.	90	18
2.	I lean to the notion of HOTS that covers *"analysis," "evaluation," and "creation"* as the standard of critical thinking.	95	19
3.	I like the concept of HOTS as an English assessment framework.	80	16
4.	I like HOTS as the teaching framework rather than the evaluation framework	80	16
5.	I favor the idea that HOTS were targeting learners to think more critically.	95	19
6.	I like the "analysis" principle, which prepares learners to think critically when they speak English.	85	17
7.	I dislike the "analysis" principle as it complicates the learners during their evaluation step.	15	3
8.	I agree that the "evaluation" principle prepares learners to comprehend the concept deeply.	85	17
9.	I dislike the "evaluation" principle as it seems complicated for us, teachers, and students to accomplish.	10	2
10.	I love the "creation" principle that helps students develop their experience from getting the experiences during the English learning process.	90	18
11.	I dislike the "creation" principle as it seems impossible to accomplish.	15	3
	Behavior		
12.	To become a professional English teacher, I should refer to the HOTS concept to evaluate students	95	19
13.	To become a professional English teacher, I should use the HOTS concepts as my students' goal to learn English.	90	18
14.	To become a professional English teacher, I should use the LOTS concepts as my students' accomplishments target to learn English.	10	2
15.	To become a professional English teacher, I should never use HOTS as a reference before evaluating my students' English learning performance.	15	3
16.	To become a professional English teacher, I should make my students embrace critical thinking skills.	80	16
17.	To become a professional English teacher, I intend to enhance my students' capability to criticise the learning process based on the existing criteria.	85	17
18.	To become a professional English teacher, I should intend to improve my students' capability to create something based on their language learning.	95	19
19.	To become a professional English teacher, I should implement the "analysis" principle for the evaluation to prepare my students' ability to reflect and think critically.	85	17
20.	To become a professional English teacher, I should implement the "analysis" principle, which is hugely complicated	15	3
21.	To become a professional English teacher, I should implement the "evaluation" principle to make my students absorb the essence of learning English.	90	18

22.	**I will not implement the "evaluation" aspect to become a professional English teacher since the "remembering" aspect is the sole purpose of learning.**	**10**	**2**
23.	To become a professional English teacher, I should implement the "creation" category to encourage my students to create something as the product of English learning.	85	17
24.	To become a professional English teacher, I should not implement the "creation" aspect as it would be too hard for learners.	10	2
	Cognitive		
25.	The infusion of HOTS in English learning assessment to assess critical thinking is ideal.	90	18
26.	The ideology used in English learning assessment should focus on students' capability to memorise what has been learned.	20	4
27.	The standard in English learning assessment should focus on the "application" aspect.	10	2
28.	Applying HOTS as the framework of English learning evaluation is ideal for stimulating students to think deeply and comprehensively understand learned topics.	95	19
29.	Targeting the students to think critically is ideal for evaluating their English learning output as their English knowledge can be used daily.	90	18
30.	The "analysis" category prepares students to open their minds and be critical thinkers to understand the situation or something.	85	17
31.	Critical thinking, which is asserted in the "analysis" category, is less crucial as the primary goal of study English is to improve fluency and accuracy to speak English like a native speaker	15	3
32.	The "evaluation" aspect prepares students to observe and understand deeper the result of their English learning.	85	17
33.	The "evaluation" aspect should only be focused on understanding what has been learned during the English classroom.	5	1
34.	The "creation" aspect prepares students to have English skills as it is the ultimate accomplishment to learn English as an International Language.	90	18
35.	The "creation" aspect, which focuses on building students' ability to create something, will complicate the students' learning process.	20	4

According to Table 2, most of the teachers shared positive attitudes toward the HOTS framework, as shown by their emotions, diffused to their enthusiasm. It is showed in the first indicator that is behavior; in statement number 2, 95% of teachers or 19 teachers out of 20 involved in this research had shared a similar attitude, which is positive. From statement number 5, it appears that almost all participants, which is 95% of participants or 19 teachers from 20, shared the idea that HOTS would make their students embrace critical thinking competence. It is shown in statements number 3 and 4. There are 80% or 16 teachers who claim that they apply this framework for their assessment. This finding is supported by the result of the interview phase that is from participant 3's statement. He stated that supplying students with HOTS is essential in this 21st century to make the students ready to meet global challenges.

Participant 3: *It is essential to equip students with the three principles of HOTS, they are analysis, evaluation, and creation to make them ready to face 21st Century challenges.*

The participant stated that those life skills could be the most effective ammunition for students after they graduate from school or universities, particularly once they face a dynamic situation and challenge nationwide and worldwide. In the early phase of the HOTS assessment, which relates to "analysis," the participants shared a positive attitude, as shown in their expression during the interview and how they fill the questionnaire. 85% of the participants or 17 teachers think that "analysis" in HOTS could stimulate their students to have critical thinking skills. The interview result of participant 2 supports this finding.

Participant 2: *I prefer to use the "analysis" aspect as one of the HOTS framework standards to analyze something or situation needed to enable students to think critically.*

The participant said that the "analysis" category of HOTS is vital to make the students able to analyze a different situation. As a result, they can develop the critical thinking skills needed to meet globalization demand. The participants also showed positive attitudes in regards to the "evaluation" phases. There are 85% of them or 17 teachers from the total participants, as seen in statement number 8. It is supported by the results of the interviews with participant 4.

Participant 4: *The "evaluation" category of HOTS is suitable for learners to identify their weaknesses and find a way to improve them.*

He stated that HOTS's "evaluation" category is appropriate for the students since it can make them know their weaknesses in the learning process. Moreover, participant 7 also supported the previous participant's idea that teachers should implement evaluation in the teaching and learning process and assessment since it is critical to improving their crucial thinking competence.

Participant 7: *Evaluating is the most needed skill to prepare students to become critical thinkers. Hence, students should be equipped with "evaluation" skills. In other words, teachers have to implement HOTS's category during the teaching and learning process as well as in language assessment.*

The "creation" aspect in the first indicator is seen as the highest cognition level. It is supported by the expressions of participant 9 and 10 in the interviews phase that stated "creation" category of HOTS can make them easier to assess the students' HOTS because it is in the form of products that generated by students.

Participant 9: *I appreciate HOTS's principles as it supports teachers in accessing their students' works and achievement. The reason is that those principles will be in the products' forms. Furthermore, those principles can trigger students' creativity.*

Participant 10: *I like the "creation" category of HOTS since it can make me easier to evaluate the "products" of my students as the "creation" aspect related to the product produce by students. It can also stimulate the students to be creative and innovative as it is crucial to embrace this 21st Century era.*

There are 90% of the participants (18 teachers), as mentioned in statement number 10, who agrees that students accomplish their learning process once they can generate the material as a whole. That is the stage where participants' positive attitudes were demonstrated. Their reasons were those steps or principles that would build their students' experiences based on their absorbed knowledge.

The next indicator is behavior. According to table 2, 95% of teachers or 19 participants intend to use HOTS in their assessment, as proved in statement number 12. There are also 90% of the participants or 18 teachers from the total participants in this study in statement number 13, who agree that to become a professional English teacher, they have to implement the HOTS concept as a student's accomplishment target in learning English. Most participants want to help their students achieve HOTS as the expression of participants 2 and 4 who stated that implement HOTS could be a way to improve their communication, collaboration, creativity, and, more importantly, self-confidence competence faces this era.

Participant 2: *This is a desirable learning method as HOTS covers the must-have skills in this 21st century. Hence, educators need to prepare their students with some skills required for their future life.*

Participant 4: *I believe that by implementing HOTS, teachers will enable students' critical thinking skills. Besides, it will help students communicate better, collaborate, be creative, and more importantly, be confident to face this era.*

Although most participants agree that HOTS is needed to equip the students for having a good performance to satisfy the expectations of the employers, some participants stated that HOTS-based questions could not be implemented in the classroom if students' cognitive skills, reading comprehension, and critical thinking are low. There are 10% or 2 teachers who stated that they want to use the Lower-Order Thinking Skill (LOTS) as their class achievement target, as shown in statement number 14. The finding also demonstrated in the questionnaire result, in statement number 15, in which there are 15% or 3 teachers who stated that they would never use HOTS before they know students' language competence. The result is also supported by the interview result of participants 5 and 6.

Participant 5: *The HOTS implementation to assess the learning process has not been ideal in Indonesian, including the English learning process. The leading cause is because the HOTS teaching framework has not been conducted well in Indonesia.*

Participant 6: *Before we implement HOTS both in teaching and learning process and assessment, we are as a teacher has to make sure that our students have good reading comprehension, cognitive skill, and critical thinking skills. They are the most vital considerations EFL teachers should make before developing HOTS-based questions or implementing HOTS in teaching and learning.*

The last indicator is cognitive. As mentioned in the table above in statement number 25, 90% of the participants, or 18 participants from all participants, expressed their shared perception of how ideal the HOTS infusion in assessing their students' critical thinking is. Their positive response can also be seen in statements number 28 and 29 (95% and 90%). This finding also following the expression of participant 1, 6, 8, and 10 who claims that targeting learners to think critically, creatively, and innovatively is the best accomplishment to assess their performance since that skill can be used to solve problems in daily lives. Participant 1 also agrees that the HOTS embodied in the Indonesian curriculum, the 2013 curriculum, is the best framework to equip learners with 21st-century skills, 4Cs skills.

Participant 1: *The injection of HOTS in the Indonesian curriculum to equip students with 21st Century skills, especially in learning assessment, is the right step.*

Participant 6: *Targeting students to think creatively and critically is a perfect accomplishment in assessing their English learning performance as their English skills can be applied in everyday life.*

Participant 8: *The "evaluation" concept trains learners to thoroughly understand and analyze their language learning experiences.*

Participant 10: *The "creation" concept will certainly build students' abilities to produce something.*

From table 2 above, it can be seen that the majority of participants, 85% of them or 17 teachers, as shown in statement number 30, affirmed that it is the core to make students think deeply about something or when they face a situation in the dynamic world. There are 85% of participants or 17 out of 20 participants, as shown in statement number 32, who claims that the "evaluation" aspect can prepare learners to observe and understand deeper during their English learning activity. There are also 90% of the participants or 18 of the teachers, as shown in statement number 34, in which they believe the "creation" aspect can make the students creative and innovative to produce something.

Teachers' Competence to Design HOTS-Based Formative Assessment

This part displays and discusses the result of the 20 sets of test questions created by the participants of this study in the

academic year of 2020. The researchers analyzed 500 multiple choice questions developed by 20 teachers in which each teacher made 25 items. Table 3 below shows a more detailed result of the study, indicating the percentages and the total of questions represented HOTS and LOTS.

TABLE 3 | The Cognitive Skills Represented in the Test Items Developed by Teachers

Participants	LOTS						HOTS						N
	R		U		Ap		An		E		C		
	n	%	n	%	n	%	n	%	n	%	n	%	
T1	6	24	7	28	10	40	2	8	0	0	0	0	25
T2	10	40	8	32	7	28	0	0	0	0	0	0	25
T3	6	24	11	44	7	28	1	4	0	0	0	0	25
T4	5	20	13	52	5	20	1	4	1	4	0	0	25
T5	9	36	11	44	5	20	0	0	0	0	0	0	25
T6	7	28	5	20	13	52	0	0	0	0	0	0	25
T7	6	24	6	24	12	48	1	4	0	0	0	0	25
T8	6	24	8	32	10	40	1	4	0	0	0	0	25
T9	8	32	6	24	9	36	2	8	0	0	0	0	25
T10	12	48	9	36	4	16	0	0	0	0	0	0	25
T11	9	36	11	44	5	20	0	0	0	0	0	0	25
T12	9	36	9	36	7	28	0	0	0	0	0	0	25
T13	10	40	7	28	8	32	0	0	0	0	0	0	25
T14	10	40	7	28	8	32	0	0	0	0	0	0	25
T15	11	44	8	32	6	24	0	0	0	0	0	0	25
T16	8	32	10	40	7	28	0	0	0	0	0	0	25
T17	8	32	6	24	9	36	2	8	0	0	0	0	25
T18	8	32	9	36	7	28	1	4	0	0	0	0	25
T19	9	36	10	40	6	24	0	0	0	0	0	0	25
T20	8	32	9	36	8	32	0	0	0	0	0	0	25

*n = the total of questions that represented each cognitive skill

**N = the total of all questions of each teacher

*** % = percentage of questions

****T1 to 20 = teacher

Note:

C	: Create	Ap	: Apply
E	: Evaluate	U	: Understanding
An	: Analyze	R	: Remember

Refers to the results displayed in Table 3 above, it indicates that the categories of Bloom's revised taxonomy reflected in the test items developed by teachers are "remembering," "understanding," and "applying." On the contrary, the HOTS category reflected in the test items produced by the participants in this study were only "analyzing" and "evaluating" categories. The "analyzing" category was created by 11 teachers with the least percentage among other categories. The "evaluating" category was constructed by 1 participant with a percentage of 4% or only 1 question of 25 questions.

It can be seen that the most category that is used by teacher 1 is the skill of "applying" with 40% or 10 questions. For teacher 2, the cognitive skill mainly used is "remember" with 40% or 10 items. Bloom's taxonomy's second most used category is "understanding" with 32% or 8 questions and "applying" with 28% or 7 items. Teachers 3 to 5 (T3 to T5) produced LOTS categories questions mostly used in their test items. The "understanding" category percentage is 44%, 52%, and 44%, respectively, or 11, 13, and 11 questions. The least category used by the three teachers is the "analyzing," "evaluating," and "creating" category. Then, the next teachers are teachers 6 to 9 (T6 to T9), have constructed questions which have "applying" category as the most category that is used in the test items with the percentage of 52%, 48%, 40%, and 36% or 13, 12, 10, 9 questions respectively. Teacher 10 (T10) has constructed questions with the "remembering" category as the most category used in his test items with a percentage of 48% or 12 questions. Teacher 11 used the skill of "understanding" in his question's items with a percentage of 44% or 11 questions. Teachers 12 to 15 (T12 to 15) employed "remembering" skills as the most frequently used category in their questions. Teachers 16 to 20 also applied LOTS categories in their test items, "understanding" and "applying."

Based on the results of this study, most of the teachers shared positive attitudes toward the HOTS framework. Most of the teachers shared positive attitudes toward the HOTS framework. The attitude was evaluated and gained based on the judgments delivered to the three principles of HOTS, namely: "analysis," "evaluation," and "creation." The positive attitudes towards HOTS are also in line with the interview result of all participants in this study. As shown in the first indicator, the affective indicator, most participants put their interest in using three principles of HOTS, and they are "analysis," "evaluation," and "creation." The three principles are used as a foundation to think critically.

Most of the teachers prefer to use this framework in their teaching methods.

The finding of this study is in line with the statement of Barnett and Francis (2012). They have explained the role of teachers to support the success of a specific educational system. English educators should encourage their learners to the HOTS through teaching and learning practices and deliver HOTS-oriented questions. Butakor and Kwame (2016) declared that educators must enhance their content mastery to improve the students' HOTS in teaching-learning activities. Still, they also have to understand HOTS and how they can be involved in the classroom setting. The researchers stated that an educator is the prominent success donor of a particular education system.

Refers to the result of the early phase of the HOTS assessment that relates to "analysis", the participants show a positive attitude. The finding is in line with the study conducted by Kamarulzaman and Kamarulzaman (2016). It is also aligned with the statement of Anderson et al. (2001). They stated that on this cognitive level that is "analysis", students could absorb the knowledge on the cognitive level, break down the situations into components, recognize non-stated assumptions, and identify motives. They also asserted that learners at the lowest HOTS level could decompose the material into constituent parts and acknowledge how the details are internally related to one another's overall structure.

Positive attitudes are also demonstrated by the participants of this study related to the "evaluation" phase. They realize that the "evaluation" category would help students develop their English knowledge and comprehend the information. Furthermore, this cognition level enables learners to judge based on the available criteria and standards. For this reason, Razmjoo and Kazempourfard (2012) affirmed that learners could criticize and consider the value of the knowledge they had learned at the evaluation level.

Regarding the third principle of HOTS, the "creation" phase, the participants also showed positive attitudes. The participants think that with this cognitive level, students can find a solution to improve their abilities. The cognitive level could train learners to make supportive activities based on their newly acquired information (Kadir, 2017). The participants think that students are superior if they can produce materials components to build a novel whole. They stated that since the concept would be in the form of students' products, it will make it easier for instructors to evaluate learners' efforts and achievements. Furthermore, the learners' inventiveness is included in this concept.

The second indicator is behavior. As the teachers showed respect towards the HOTS framework, this indicator mainly focused on uncovering the English teachers' probability of using this framework in their professional teaching experience. Hence, the finding revealed that most teachers or participants in this research expressed a positive attitude towards HOTS for assessing students' English language learning output. The finding is also supported by the interview results, as can be seen in the transcription above. Most of the participants agree that this cognitive level will make students can express and support opinions by articulating decisions on facts, the value of concepts, or consistency of performance according to some criteria.

In contrast, some participants stated that HOTS-based questions could not be implemented in the classroom if students' cognitive skills, reading comprehension, and critical thinking are low. This finding is in line with the idea of Dwyer et al. (2014), who claims that students have to have comprehension skills first before they can think critically. In other words, they have to have LOTS first before they can step to the stage of HOTS. Although some participants expressed that HOTS is not ideal, most of the participants apprehend that the three principles in HOTS are suitable for building critical thinking skills for students in Indonesia, especially in this 21st century. More importantly, the capability to think strategically, reflect, and implement the absorbed knowledge in any situation in life is seen as the leading indicator of competency and can even be applied to any discipline and profession (Conklin, 2012). Therefore, this is essential to use the HOTS framework for any learning assessment.

The third indicator is cognitive. The finding indicates that most participants express their positive cognition towards HOTS principles, promising English language assessment. It can be showed by questionnaires results and the expression of participants in interviews. The HOTS framework was seen as a potential framework to be used as it can investigate and assess students' English competence. Almost all participants proclaimed that teaching students to have critical thinking ability is the quintessential objective to teach English since they would use English during classroom activities and in their daily lives. Furthermore, the participants accentuated that the HOTS, especially the "creation" principle, could prepare students to learn English proficiently. That is in line with the statement of Siregar and Amalia (2019), who stated that the "creation" aspect would be their ultimate accomplishment when teaching English as an international language.

The positive cognitive was shown from the participants' attitudes related to the "analysis" principle. This cognition level could make students evaluate options before making decisions (Alzu'bi, 2014). Secondly, critical thinking as the result of doing the "analysis" would help students ask questions to their teachers and people in the community and help them be better students and society members (Dwyer et al., 2014; Mainali, 2012; Zohar, 2006). Connected to other HOTS levels that are "evaluation" can also be seen in the table above. That "evaluation" of the participants' positive cognition can be shown in some staple reasons, including that the item was acceptable to apply since it would encourage learners to think about their options before making a judgment or decision. The teachers also believed that learners' capacity to evaluate themselves in terms of gained knowledge in class would allow them to know about their weaknesses and strength during the learning activity. Hence, as expressed by participants in the transcription above, learners would be less likely to misinterpret information and make errors if they did so.

Based on the data of this study related to the participants' competencies in designing HOTS-based formative assessment, the data showed that participants experience

difficulties in creating HOTS-based formative assessment. Some previous studies also analyzed HOTS-based questions, especially in Indonesia, like the study of Anasy (2016), Atiullah et al. (2019), Susandari et al. (2020), Utami et al. (2019), and Zaiturrahmi et al. (2017). Then, there are some previous studies in which investigate HOTS in a high-stakes assessment that is National Examination in Indonesia, such as Ahmad (2016), Putra and Abdullah (2019), and Ramadhana et al. (2018). Most of them supported this study's finding that almost all of the questions developed by teachers are still represented LOTS.

According to the result displayed in Table 3, it can be inferred that, while the proportion of each skill of each teacher varied, the similarity is, the most skills depicted on the questions are the category of "remembering," followed by "understanding," and "applying" category in which they are categorized into LOTS. From the table above, it is clear that the level of HOTS reflected in the test items developed by teachers is only the category of "analyzing." In contrast, the "evaluating" and "creating" category is the least that almost all participants use. From the six categories of Bloom's revised taxonomy, questions that are categorized into "remembering," "understanding," and "applying" are at the top, compared to the questions that are categorized into "analyzing," "evaluating," and "creating." Although the teachers have a positive attitude towards implementing HOTS-based assessment, their competence in developing HOTS-based assessment is still low. This finding is in line with the study of Utami et al. (2019), who stated that most English language educators still have not fully understood HOTS's whole concept yet. Furthermore, the answer to the first research questions explains that the educators had agreed that HOTS implementation in the learning and teaching activities, including assessment, is essential. They believed that HOTS was urgent to cultivate and become Indonesian students' fundamental skills to face the 21st-century era.

Finally, educators understand that students' HOTS can be advanced by assisting them with a good classroom activity, including providing them with HOTS-based assessment. They stated that the activity could enable them to engage in the thinking process that requires HOTS. The result can be assumed that the teachers have good behavior and awareness about the importance of HOTS. Yet, the teachers still have lack understanding and knowledge about HOTS. This situation could affect HOTS's employment in the classroom, as Feng (2014) asserts that the educator's knowledge of HOTS was essential to assure their students' learning success. Seman et al. (2017) stated that not understanding HOTS will be unable to master HOTS. The teachers' lack of knowledge on HOTS will also be directed to creating effective instruction and applying it for a classroom activity. Hence, the correct HOTS concept will influence the proper teaching and learning instruction and assessment.

CONCLUSION

This study was conducted to investigate senior high school teachers' attitudes and competence towards HOTS. It found that all English teachers expressed a positive attitude towards HOTS and seen it as the most effective assessment. It was demonstrated in their judgments of the HOTS framework and their affective, behavioral, and cognitive aspects. As seen in the affective aspect, the participants show a positive attitude toward HOTS implementation. In the behavioral aspect, the respondents expressed a positive attitude toward substantiating the HOTS as the standard for their students to accomplish their English language classes in their careers. In terms of the cognitive facet, all teachers expressed their enthusiasm for implementing the HOTS basic tenets in light of their prospects for furthering English language assessment. It was seen as having the capacity to become the guideline for examining and evaluating learners' present English skills and competence.

Another, despite the positive attitude towards HOTS's employment in assessment, the teachers' competence in developing HOTS assessment is still low. This research is seen as a fundamental framework for the teachers to improve their English teaching perseverance. It can be used as a teacher's reference to amending their assessment quality. Furthermore, HOTS's implementation of the knowledge courses or training should be conducted progressively for English teachers, both pre-service and in-service teachers, to improve their knowledge to implement HOTS, particularly in English language study.

Ultimately, further research in the contemporary environment is needed to combine with other data collection techniques and instruments, such as class observation and teachers' reflective journals, to better comprehend teachers' competencies in developing HOTS assessment. Furthermore, more specific types of assessment such as formative assessment or summative assessment are highly suggested to see more detail about teachers' knowledge in developing HOTS-based assessment in both types of assessment.

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