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PRE-SERVICE ENGLISH TEACHER PERCEPTION ABOUT HIGHER ORDER THINKING SKILLS (HOTS) IN THE 21ST CENTURY LEARNING

Desy Nur Fakhomah and Melati Sri Utami
Graduate Program of English Education Department
Faculty of Teacher Training and Education, Sebelas Maret University
dnurfakhomah@gmail.com and melatiutami288@gmail.com
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Abstract
In Indonesia, the consciousness of the significance of HOTs becomes an educational purpose. This study aims to investigate what teachers' perception and the difficulty in implementing HOTS in 21st century of English language teaching. This research adopted a "sequential explanatory mixed methods" design (Creswell, 2014). It is regarded as explanatory because the initial quantitative data results are explained with the qualitative data. There were 5 participants in total who have volunteered for this study. They are the Pre-service English Teacher of Professional Teacher Program from different universities using randomized sampling. This study indicated that the participants have a high perception in implementing HOTs in the classroom. However, the participants face some difficulties in its implementation, such as time management and students' ability.

Keywords: perception, pre-service English teacher, higher order thinking skills, 21st century

Introduction
Nowadays, education around the world needs the improvement of the educational system in case of the information outburst, globalization, and competition to face the challenges of the 21st century. This improvement is not only about the alteration of the curriculum substance but rather the alteration of the pedagogy. It includes the change of conventional teaching which emphasizes on Low Order Thinking Skills (LOTs) to the one which emphasizes on Higher Order Thinking Skills (HOTs). In other words, this alteration process functioned as the mind of well-conceived educational improvement and reform because of the changes of the 21st century (Paul (1995) in Afandi, et al., 2018).

The Taxonomy of Educational Objectives, Handbook I: Cognitive Domain (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956) is the taxonomy which many readers "may have studied during their teacher education programs " (Brookhart, 2010). "Bloom's taxonomy is still used in many curriculum and teaching materials" including in Indonesia. The first Bloom Taxonomy consisted of six

majors, namely knowledge, comprehension, application, analysis, synthesis, evaluation.

According to Brookhart (2010), Anderson and Krathwohl published a revision of the Bloom handbook in 2001, which consists of the following six points:

"1. Remembering means recognizing or recalling facts and concepts.
2. Understanding means basic comprehension, understood in light of newer theories of learning that emphasize students constructing their own meaning. The understanding process takes in interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
3. Applying means executing or implementing a procedure to solve a problem.
4. Analyzing means breaking information into its parts, determining how the parts are related to each other and to the overall whole. The analyzing process takes in differentiating, organizing, and attributing and responsing multiple correct.
5. Evaluating means judging the value of material and methods for given purposes, based on criteria. The evaluating process takes in checking and critiquing.
6. Creating means putting disparate elements together to form a new whole, or reorganizing existing elements to form a new structure. The creating process takes in generating, planning, and producing".

Additionally, Brookhart (2010:5) states that higher-order thinking envisaged of as the top end of the Bloom's cognitive taxonomy. "The teaching goal behind any of the cognitive taxonomies is providing students to be able to do transfer". "Being able to think" means students can apply the knowledge and skills they developed during their learning to new contexts. "New" here means applications that the student has not thought of before, not necessarily something universally new. "Higher-order thinking is envisaged as students being able to relate their learning to other elements beyond those they were taught to associate with it".

In other hand, Indonesia Education Minister also established Standard Competences of Elementary and High Education Graduate which should be reached. It is arranged in Regulation of Education and Culture Minister of Indonesia Number 20 Year 2016. There are three aspects which the graduate should get. They are 1) attitude, 2) knowledge, and 3) skill. In line with the Bloom Taxonomy, Regulation of Education and Culture Minister of Indonesia Number 22 Year 2016 about Standard Process of Elementary and High Education states that knowledge is gained by activities "remembering, understanding, applying, analysing, evaluating and creating".

The term *Higher Order Thinking* (HOT) refers to "thinking on a level that is higher than memorizing facts or telling something back to someone". Moreover, "HOT takes thinking to higher levels than restating the facts and requires students to do something". In addition, the traditional paradigm often confronted the consciousness of the importance of building a learning process that emphasizes on HOTs in 21st century. They still focus on aspects of knowledge and material mastery. However, as a consequence, the learning process that occurs will rather

focus on LOTs and the learning activities will rely on teachers in the classroom that makes the learners become inactive recipients of information.

Afandi, Sajidan, Akhyar, and Suryani (2018) conducted research to identify pre-service science teacher perceptions about HOTs in 21st century. By employing a quantitative design using a survey research method involving 120 pre-service science teachers from Tanjungpura University. The results indicated that students were aware of the importance of HOTs and learning that emphasizes the aspects of HOTs to face the challenges of the 21st century. It is indicated by the mean score of pre-service science teacher perception about the important of HOTs to meet the challenges in the 21st century.

In addition, Hashim, Osman, Arifin, Abdullah, and Noh (2015) conducted research entitled Teachers' Perception on Higher Order Thinking Skills as an Innovation and its Implementation in History Teaching which aimed to address teachers' perception on Higher Order Thinking Skills as an innovation and to identify at what level teachers utilize Higher Order Thinking Skills in history teaching. The findings found that all of the teachers admit that the need, clarity, complexity and quality of HOTS as an innovation, had been addressed either moderately (67.2%) or well addressed (32.8%). However, in implementing HOTS, the overall findings indicate that two-thirds of the teachers (66.6%) were still low- level users of HOTS in history teaching. This research has indicated that educational change depends on what teacher 'do' and 'think'.

On the other hand, Schulz and Patrick (2016) conducted a study by interviewing "38 teachers in Kindergarten to Grade 9 classrooms from 14 schools in Newfoundland and Labrador, Canada, to obtain their understandings of critical and higher order thinking in social studies and science, and how this affects instruction and assessment". Schulz and Patrick (2016) found out that "the teachers believed that higher order thinking was important for all students, and attempted to teach thinking; however, they were less sure of how they might assess thinking".

Based on the phenomena above, the writers want to investigate teacher's perception of Pre-Service English Teacher at Professional Teacher Program towards Higher Order Thinking Skill and investigate the obstacles which they have experienced in their classroom.

Method

This research adopted a "sequential explanatory mixed methods" design (Creswell, 2014) that aims to identify the pre-service teacher belief about HOTs in 21st Century learning in English language teaching. This design involves a "two-phase project in which the researcher collects quantitative data in the first phase, analyses the results, and then use the results to plan the second, qualitative phase" (Creswell, 2014). It is regarded as "explanatory because the initial quantitative data results are explained with the qualitative data. It is considered sequential because a quantitative phase follows the qualitative phase".

In the first phase of the research, quantitative data was collected by inviting five pre-service English teachers from Professional Teacher Program to fill the questionnaire in Google form. The questionnaire is in English. The next phase of

the research was explanatory and provided a more in-depth explanation of the findings that was done by interviewing the participants.

There are 5 participants in total who have volunteered for this study. The participants are the Pre-service English Teacher of Professional Teacher Program from different university using randomized sampling. The instruments used for this study is a questionnaire by Fullan (2007). A total of 11 items of statements in the questionnaire used in this study to identify pre-service science teacher perception about HOTs in 21st century, range from strongly disagree to strongly agree.

Data in this study were analyzed using descriptive statistics such as mean and standard deviation using SPSS version 21. First, the data were obtained and then being converted on the four scales. Next, the data are being tested using descriptive statistics and interpreted using criteria.

Findings and Discussion

In order to investigate pre-service English teacher's perception at Professional Teacher Program towards Higher Order Thinking Skill (HOTs) and the obstacles they have experienced in their classroom, the researcher used questionnaire for answering the first research question and also used interview for ensuring the first question and answering the second research question. The questionnaire has four parts, such as: teachers' perception on the need of HOTS as an innovation, teachers' perception on clarity of HOTS, teachers' perception on complexity of HOTS, and teachers' perception on the quality and practicality of HOTS. Teachers were asked to rate their response using the four –point scales of measurement that is, 4- Strongly Agree (SA); 3- Agree (A); 2- Disagree (D); 1- Strongly Disagree (SD).

The first part of questionnaire is teachers' perception on the need of HOTS. This table below shows the result of the questionnaire.

Table 1. Teachers' Perception on the Need of HOTS

Part 1: Teachers' Perception on the Need of HOTS.							
Statement	**SA**	**A**	**D**	**SD**	**Mean Score**	**Standard Deviation**	**Interpretation**
I can survive in school system without having to teach HOTS.	-	3	2	-	2.6	0.548	Moderate
I do not see teaching HOTS as the priority need in English teaching.	-	1	2	2	1.8	0.837	Low
I can relate the importance of implementing HOTS in English teaching now for future.	4	1	-	-	3.8	0.447	High

Based on the table above, there are three participants who agree that they can survive in school system without having to teach HOTS, however two participants are disagree toward the statement. It is obtained that the mean score of the first statement is 2.6 and the standard deviation is 0,548. Thus, it means that the participants have moderate perception that they can survive in school system without having to teach HOTS.

For the second statement, there is a participant agrees to the second statement (I do not see teaching HOTS as the priority need in English teaching), the other two participants are disagree and the other two participants are strongly disagree. It is obtained that the mean score of the first statement is 1.8 and standard deviation is 0,837. Thus, it means that the participants have low perception that they do not see teaching HOTS as the priority need in English teaching.

The result for the third statement shows that four participants are strongly agree that they can relate the importance of implementing HOTS in English teaching now for future, and the other one participant agrees. It is obtained that the mean score of the first statement is 3.8 and standard deviation is 0.447. Thus,it means that the participants have high perception that they can relate the importance of implementing HOTS in English teaching now for future.

In line with the interview, all of the participants said that teaching HOTS is important in their class because it can make the students more active, face globalization and have critical thinking in learning English.

The second part of the questionnaire is teachers' perception on clarity of HOTS. This table below shows the result of the questionnaire.

Table 2. Teachers' Perception on Clarity of HOTS

Part 2: Teachers' Perception on Clarity of HOTS.							
Statement	**SA**	**A**	**D**	**SD**	**Mean Score**	**Standard Deviation**	**Interpretation**
I am not clear about HOTS goals	-	-	3	2	1.8	0.447	Low
I am not at all clear about what I should do differently in implementing the HOTS	-	3	1	1	2.6	0.548	Moderate
The guideline related to HOTS is clear	-	2	3	-	2.6	0.548	Moderate

Based on the table above, there are three participants who disagree that they are not clear about HOTS goals, even two participants are strongly disagree about it. It is obtained that the mean score of the first statement is 1.8 and standard deviation is 0.447. Thus, it means that the participants have low perception that

they are not clear about HOTS goals. In other words, the participants understand the HOTS goals.

For the second statement, the result shows that there are three participantswho agree that they are not at all clear about what I should do differently in implementing the HOTS, one participant is disagree and the other one participant is strongly disagree. It is obtained that the mean score of the first statement is 2.6 and standard deviation is 0.548. Thus, it means that the participants have moderate perception that they are not at all clear about what they should do differently in implementing the HOTS.

The result for the third statement shows that two participants are agree that the guideline related to HOTS is clear, and three participants disagree. It is obtained that the mean score of the first statement is 2.6 and standard deviation is 0,548. Thus, it means that the participants have moderate perception that the guideline related to HOTS is clear.

In the interview, the writer asked the teachers to give example of HOTS question in order to find out whether the participants are surely obvious of implementing HOTS or not. The participants can give the HOTS question correctly. However, some of the participants emphasize on 'why' question for asking HOTS questions. Even, they are not given the obvious explanation from their lecturers about HOTS so they should deeply learn by themselves.

The third part of questionnaire is teachers' perception on the Complexity of HOTS. This table below shows the result of the questionnaire.

Table 3. Teachers' Perception on Clarity of HOTS

Part 3: Teachers' Perception on the Complexity of HOTS.							
Statement	**SA**	**A**	**D**	**SD**	**Mean Score**	**Standard Deviation**	**Interpretation**
It is difficult to teach HOTS	1	4	-	-	3.2	0.447	High
It is difficult to understand the concepts of HOTS	1	2	2	-	2.8	0.837	Moderate
Teaching HOTS requires a sophisticated array of activities	1	2	2	-	2.8	0.837	Moderate

Based on the table above, there is one participant who strongly agree that it is difficult to teach HOTS, even four participants are agree. It is obtained that the mean score of the first statement is 3.2 and standard deviation is 0.447. Thus, it means that the participants have high perception that it is difficult to teach HOTS.

For the second statement, the result shows that there is one participant who strongly agree that they difficult to understand the concepts of HOTS, however

two participants are agree and the other two participants are disagree. It is obtained that the mean score of the first statement is 2.8 and standard deviation is 0.837. Thus, it means that the participants have moderate perception that it is difficult to understand the concepts of HOTS.

The third statement result shows that there is one participant who strongly agrees that teaching HOTS requires a sophisticated array of activities, however two participants are agree and two participants are disagree. It is obtained that the mean score of the first statement is 2.8 and standard deviation is 0.837. Thus, it means that the participants have moderate perception that teaching HOTS requires a sophisticated array of activities.

In line with the result of interview, the participants explained that they face difficulties in implementing HOTS in their class, such as students' ability and the time management. It needs long time and they have to be careful for time management. Every student has different background knowledge, so they have to consider what kind of HOTS questions or activity.

The four part of questionnaire is teachers' perception on the quality and practicality of HOTS. This table below shows the result of the questionnaire.

Table 4. Teachers' Perception on the Quality and Practicality of HOTS

Part 4: Teachers' Perception on the Quality and Practicality of HOTS.							
Statement	**SA**	**A**	**D**	**SD**	**Mean Score**	**Standard Deviation**	**Interpretation**
The preparation time is necessary to generate quality teaching.	4	1	-	-	3.8	0.448	High
High quality training materials in HOTS (print, video, electronic) are provided along.	3	2	-	-	3.6	0.548	High

Based on the table above, there is one participant who agrees, even four participants are strongly agree that the preparation time is necessary to generate quality teaching. It is obtained that the mean score of the first statement is 3.8 and standard deviation is 0.447. Thus, it means that the participants have high perception that the preparation time is necessary to generate quality teaching.

For the second statement, the result shows that there are two participant who agree, even three participants are strongly agree that High quality training materials in HOTS (print, video, electronic) are provided along. It is obtained that the mean score of the first statement is 3.6 and standard deviation is 0.548. Thus,it means that the participants have high perception that high quality tr aining materials in HOTS (print, video, electronic) are provided along.

In line with the result of interview, the participants explained that in implementing HOTS, they need to manage the time and materials before teaching HOTS in their class.

Conclusion

This study indicated that the participants have high perception in implementing HOTS in the 21st century learning. However, the participants face some difficulties or obstacles in implementing HOTS in English language teaching, such as the time management and students' ability. The time management means that the pre-service English teachers need more time and they have to be careful for the time management in teaching HOTS into the classroom. The second obstacle is students' ability because every student has different background knowledge. There are some students who are capable to solve the problem or HOTs question, while there are also some students who get difficulty to solve the problem or HOTS question. Therefore, the participants have to consider what kind of HOTS questions or activity should be implemented in the classroom.

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