



SNAP TO READ

## THE FAMILIARITY OF THE PRE-SERVICE ENGLISH TEACHERS WITH THE HIGHER ORDER THINKING SKILLS IN ELT

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### **Abstract:**

*Since higher order thinking skills have been targeted as one of the instructional objectives at Indonesian schools, investigating to what extent the pre-service English teachers are familiar with the concept of the higher order thinking skills in ELT is necessary. The current study was conducted to investigate to what extent the pre-service English teachers are familiar with the concept of higher order thinking skills in English language teaching. A survey research was employed which encompass 109 respondents. The finding of the current study reveals that the familiarity of the pre-service English teachers with the concepts of the higher order thinking skills in ELT is at the moderate level. It indicates that most pre-service English teachers are quite familiar with the concept of the higher order thinking skills but their knowledge is not deep. The implication to the teaching of English language may be that the teaching of the higher order thinking skills are not fully infused to the English language teaching. Therefore, future researchers are recommended to investigate the English teachers' practice dealing with the promotion of the higher order thinking skills.*

**Keywords:** *Familiarity, Pre-Service English Teachers, HOTS*

Nowadays higher order thinking skills have become the interest of many scholars in education. The interest is due to the fact that the higher order thinking skills constitute the strategic and important skill to prepare the students of all levels of education for the 21st century challenges. The American government's Partnership for 21st Century Skills (2009) clearly emphasizes that the key skills needed for 21st century are the higher order thinking skills. The higher order thinking skills which are considered as part of the critical thinking have been promoted in elementary and junior high school students representing different abilities (Preus, 2012). The need to promote the higher order thinking skills is insisted by Beaumont (2010) since this thinking process enable the students to make reasonable judgment not only in the classroom but also in their life out of the classroom.

In education, higher order thinking skills have been precisely conceptualized as the process of thinking which involves high level of comprehension. The concept of higher order thinking skills are well attributed to Bloom's learning taxonomy and Marzano's dimensions of thinking (King, Goodson, and Rohani, 2014). In Bloom's learning taxonomy, the higher order thinking skills encompass the ability to analyze, evaluate, and synthesize. Marzano's dimensions of thinking extend the thinking process into a concept encompassing concept and principle formation, comprehension, problem solving, decision making, scientific inquiry, composition, oral discourse, and relationships between processes and skills.

Higher order thinking skills have been widely implemented in various disciplines such as music education (Sheldon and De Nardo, 2005), undergraduate biology (Bolotin and Nashon, 2012), chemistry (Hobson, 1997), in-service science teachers (Barak and Dori, 2009) and even in video games (Rice, 2007). In English language teaching, Slifkin (2001) investigated occurrences and variances in higher order thinking within a reflective journal environment in writing class. He revealed that higher order thinking did occur naturally throughout high school students' reflective journal entries. Students' writing provided evidence of higher order thinking at all four

original levels of Bloom's taxonomy: application, analysis, synthesis, and evaluation. In EFL reading comprehension, Ghaith and El Malak (2004) examine the effect of cooperative Jigsaw II on improving literal and higher order reading comprehension in English as a foreign language. The study revealed a statistically significant difference in favor of the experimental group on the variable of higher order comprehension.

The importance of promoting higher order thinking at colleges has been convinced by Piergiovanni (2014), stating that college education is expected to improve students' critical thinking skills. In addition, the EFL courses at colleges must also reflect the achievement of critical thinking skills, one of which ways is through higher order thinking skills. Referring to the curriculum of EFL at Indonesian universities, referential and inferential reading comprehension courses become the important concern. Comprehension and inferential reading are considered the main center of higher order thinking as suggested by Bloom and Marzano since comprehension remains the process by which individuals construct meaning from information and form new 'schemata' or knowledge (Crowl, et al., 1997 in King et al.).

Considering the importance of promoting higher order thinking skills at schools, the current study is trying to reveal to what extent pre-service English teachers of Indonesian universities deal with the concepts of the order thinking skills in ELT classes. The university teachers' strategies in this area may be explored in two ways. The first focus is the university teachers' knowledge in the context of teaching higher order thinking in inferential reading comprehension courses. The second focus is the possible models or practices which imply the teaching strategies promoting the higher order thinking skills in inferential reading comprehension courses employing complex English text.

## **RESEARCH METHOD**

Since the objective of the current study is to reveal the perspectives

of the pre-service English teachers, a survey is employed. The researcher attempts to explore to what extent the pre-service English teachers are familiar to the concept of Higher Order Thinking Skills when being implemented at English class. The main information to be investigated are focused on the familiarity to the technical realization of Higher Order Thinking Skills aspects, namely, analyzing, evaluating, and creating when they are implemented in the English classes.

The study was conducted in State Islamic Institute of Tulungagung in East Java. This Islamic institute was selected on the basis of the university accreditation score of at least B. In addition, this institute also owns an English language teaching study program of which accreditation is also at least B. After the university was determined, the researcher distributed questionnaires for a purpose of selecting subjects, in this case the pre-service English teachers, and of investigating their familiarities with the concepts of higher order thinking skills. The total subjects of the current study was 109 pre-service English teachers.

The questionnaire is developed to elicit information about the familiarity of pre-service English teachers on teaching the higher order thinking skills. To maintain the validity of questions in the questionnaires, a blueprint of questionnaire from which the items are constructed was developed. The construction of the items are based on the dimensions of research questions. Every dimension is divided into variables/sub variables which further are developed into several indicators representing the items in the questionnaire guide.

### **The Familiarity of Pre-service English Teachers with Higher Order Thinking Skills**

The discussion of the perspectives of pre-service English teachers on higher order thinking skills is presented into two sub-discussions: the overall perspectives on the higher order thinking skills and the specific perspectives on the components of higher order thinking skills.

***The Overall Familiarity***

In investigating the pre-service English teachers' familiarity to the concept of Higher Order Thinking Skills, three categories of choices are proposed: 'yes', 'not sure', and 'no'. The response 'yes' and 'no' indicate that the respondents know very well the statements being questioned. As the result, they will take their stand whether the statements are true or false according to their perspectives. On the contrary, the response 'not sure' gives impression that the respondents do not have adequate knowledge on the statements being questioned.

Table 1 The Familiarity of Pre-Service English Teachers with HOTS

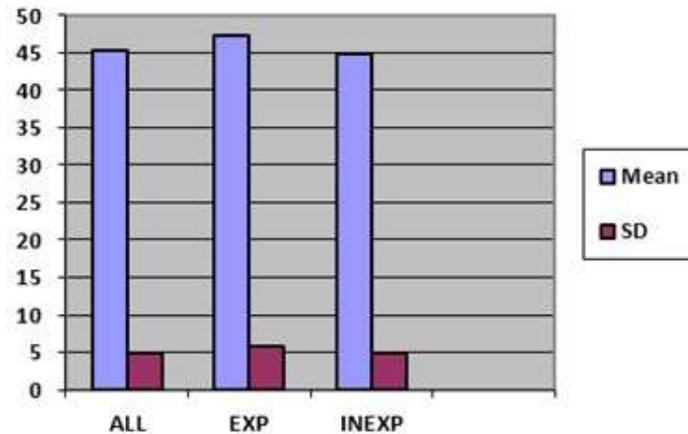
SUBJECT (N)	ASPECTS OF HOTS									OVERALL HOTS		
	C			E			A			S	X	SD
	S	X	SD	S	X	SD	S	X	SD			
Experienced (14)	243	17.35	1.73	220	15.71	2.67	198	14.14	2.85	661	47.21	5.88
Inexperienced (95)	1595	16.97	2.02	1343	14.28	2.31	1285	13.67	2.05	4224	44.93	4.83
Total (109)	1839	17.02	1.98	1563	14.47	2.40	1483	13.73	2.16	4885	45.23	5.00

Dealing with to what extent the pre-service English teachers are familiar to the higher order thinking skills, this current study reveals that overall the sum score gained is 4885, the mean score is 45.23 and the standard deviation is 5.00 (Table 1). Reviewing the categories of the score, it can be described as the following: score 48-60 mean that the respondents have high knowledge on the concept of higher order thinking skills. Score 34-47 show that the respondents have moderate knowledge on the concept of higher order thinking skills. Score 20-33 indicates that the respondents have low knowledge on the concept of higher order thinking skills. Considering the mean score, generally it can be said that the pre-service English teachers' knowledge on the higher order thinking skills is just moderate. In other words, it can be said that generally the pre-service English teachers are not familiar for sure the concept of higher order thinking skills in relation to the teaching and learning process.

When the subjects are distinguished into those who have experienced in

teaching English for about one to three years and those who have not, it can be identified that the experienced pre-service English have better understanding on the concept of higher order thinking skills in education. The finding reveals that the sum score, the mean, and the standard deviation gained for this group are 661, 47.21, and 5.88 respectively. On the contrary, the sum score, the mean, and the standard deviation of the inexperienced pre-service English teachers are 4224, 44.93, and 4.83 respectively. Comparing the means of those two groups, it can be identified that the experienced pre-service gain higher mean than the inexperienced pre-service English teachers although both means still belong to the moderate categories.

Considering the standard deviation, the variability of the experienced pre-service English teachers is higher than the variability of the inexperienced pre-service English teachers. It implies that some of the experienced pre-service English teachers know well the concept of higher order thinking skills and the rest only moderately know that concept since the mean of this group is close to the high category. On the contrary, the majority of the inexperienced pre-service English teachers don't know well the concept of higher order thinking skills. It can be shown by the mean and standard deviation of this group. The mean of this group falls into the moderate level and the smaller standard deviation indicates the least heterogeneous. This finding confirms that experience may contribute to the improvement of the knowledge of higher order thinking skills in education especially in English language teaching.



Picture 4.1 The Overall Perspectives on Higher Order Thinking Skills

### **The Perspectives on the Components of Higher Order Thinking Skills**

The components of higher order thinking skills in this current study refers to the idea of revised Bloom Taxonomy (2002) which encompass the highest three levels of the taxonomy. They are ‘creating’, ‘evaluating’, and ‘analyzing’.

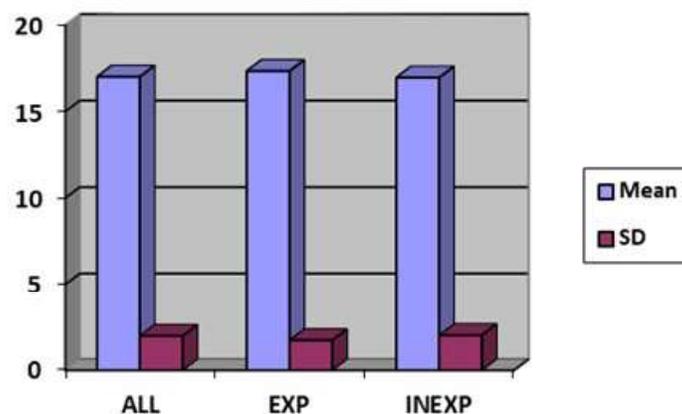
First, the ‘creating’ aspect of higher order thinking skills indicate that the students who possess the higher order thinking skills must be able to make, to design, to construct, to invent, to produce, or to plan. In English language teaching and learning, the ‘creating’ ability is reflected through the students’ work and performance in writing and speaking. The questions proposed to investigate the perspective of the pre-service English teachers in this aspect are dealing with whether or not the students’ ability in making outline, producing piece of writing, inventing new authentic learning strategies belong to the higher order thinking skills.

The mean score 7-11 indicates that the pre-service English teachers have bad understanding or perception that the students’ ability to create or to produce constitutes the indicator of higher order thinking skills. The mean score 12-16 show that the pre-service English teachers have fair understanding or perception. While the mean score 17-21 give clear description that the pre-service English teachers have good understanding or perception that

ability to ‘create’ is one measurement of thinking at the higher order level.

This current study reveals that the majority of the pre-service English teachers well perceive that the students’ ability to create is considered as the indicator of higher order thinking skills. The sum of the score is 1839. From the highest range of mean score 17-21, at this ‘creating’ aspect, the mean score gained is 17.02 in the standard deviation of 1.98. Although the mean score belongs to the high category and the variability is low, the achieved mean score is at the lowest level of this category. It means that although their perception in this ‘creating’ aspect is good, the perception is not yet so convincing.

Comparing between the perception of the experienced and the inexperienced pre-service English teachers, the gap in term of the mean score gained is not meaningful. The mean score of these two groups at the ‘creating’ aspect is 17.35 and 16.97 respectively. It indicates that either the experienced pre-service English teachers or the inexperienced ones perceive that ‘creating’ constitutes the indicator of higher order thinking skills. The difference between these two groups lies on the score of the standard deviation. The standard deviation is 1.73 and 2.02 respectively. The standard deviation of the experienced pre-service English teachers is lower than of their counterpart. It indicates that the variability of this group is lower.



Picture 4.2 The Perspective on ‘Creating’ Aspect

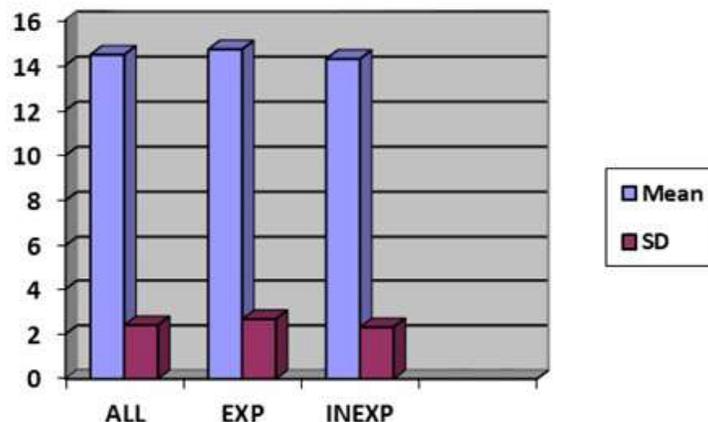
Second, the ‘evaluating’ aspect of higher order thinking skills indicate that the students who possess the higher order thinking skills must be able to judge, to test, to monitor, to experiment, to check, or to hypothesize. In English language teaching and learning, the ‘evaluating’ ability is reflected through the students’ activities in assessing their work. To reveal this aspect, the questions proposed to investigate the perspective of the pre-service English teachers are such as whether or not the students’ ability in conducting peer assessment, doing self-assessment, making inferences, identifying errors, making personal judgment, and identifying the self-progress belong to the higher order thinking skills.

The mean score 7-11 indicates that the pre-service English teachers have poor understanding or perception that the students’ ability to assess or to make personal judgment constitutes the indicator of higher order thinking skills. The mean score 12-16 show that the pre-service English teachers have fair understanding or perception. While the mean score 17-21 give clear description that the pre-service English teachers have good understanding or perception that ability to ‘evaluate’ is also one measurement of thinking at the higher order level.

The mean score of the pre-service English teachers in this ‘evaluating’ aspect is 14.47. The sum of the score gained is 1563. This indicates that the majority of the pre-service English teachers moderately perceive that the students’ ability to make personal judgment constitutes one indicator of higher order thinking skills. From the moderate range of mean score 12-16, the mean score of 14.47 and the standard deviation of 2.40 can be inferred that most pre-service English teachers are not sure yet that ability to judge reflects the higher order thinking skills. This condition is different from their perception on the ‘creating’ aspect in which the mean is higher. What can be inferred is that most of the pre-service English teachers better perceive that ‘creating’ is more obvious to be the indicator of higher order thinking than ‘evaluating’ aspect.

In ‘evaluating’ aspect, the mean of the experienced pre-service English

teacher is 15.71 while the mean of the inexperienced pre-service English teacher is 14.28. The standard deviation is 2.67 and 2.37 respectively. Comparing between the perception of the experienced and the inexperienced pre-service English teachers on the ‘evaluating’ aspect, the gap in term of the mean score gained is quite meaningful. It indicates that the experienced pre-service English teachers are more convinced that the ability to make personal judgment is also the indicator of higher order thinking comparing to the inexperienced pre-service English teachers. The standard deviation of the experienced pre-service English teachers is higher than of the inexperienced pre-service teachers. It shows that the number of the inexperienced pre-service English teachers who have less moderate perception is more homogeneous than the number of the experienced pre-service English teachers. It can be said that possibly some of the experienced pre-service English highly convince that ‘evaluating’ includes the higher order thinking skills.



Picture 4.3 The Perspective on ‘Evaluating’ Aspect

Third, the ‘analyzing’ aspect of higher order thinking skills encompass the students’ ability to compare, to organize, to outline, to structure, and to integrate. In English language teaching and learning, the ‘analyzing’ ability is reflected through the students’ activities in comparing and contrasting their work with their peers’ work and the work model. To reveal the pre-service

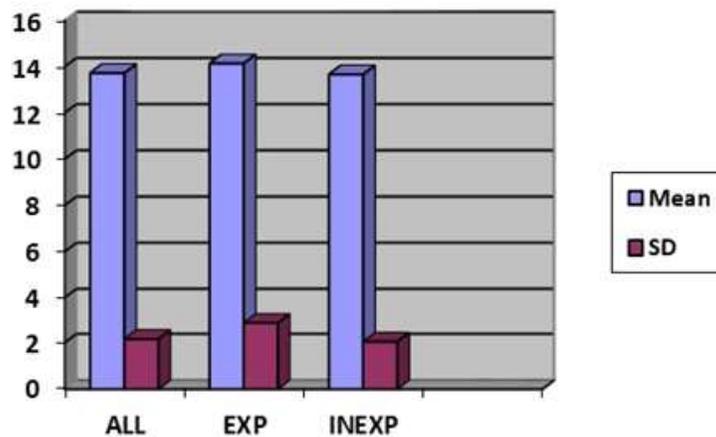
English teachers' perspective on this aspect, the questions are proposed such as whether or not the students' ability in identifying the similar characteristics, identifying contrastive characteristics, putting ideas into coherent order, finding specific information in the passage, making outline in writing, and integrating some different concepts can be called to have the higher order thinking skills.

The mean score 6-10 indicates that the pre-service English teachers have poor understanding or perception that the students' ability in identifying the similar characteristics, identifying contrastive characteristics, putting ideas into coherent order, finding specific information in the passage, making outline in writing, and integrating some different concepts constitutes the indicator of higher order thinking skills. The mean score 11-14 show that the pre-service English teachers have fair understanding or perception. While the mean score 15-18 give clear description that the pre-service English teachers have good understanding or perception that ability to 'analyze' is also one important aspect of thinking at the higher order level.

The mean score of the pre-service English teachers in this 'analyzing' aspect is 13.73. The sum of the score gained is 1483. This indicates that the majority of the pre-service English teachers moderately perceive that the students' ability in identifying the similar characteristics, identifying contrastive characteristics, putting ideas into coherent order, finding specific information in the passage, making outline in writing, and integrating some different concepts constitutes one indicator of higher order thinking skills. From the moderate range of mean score 11-14, the mean score of 13.73 and the standard deviation of 2.16 can be inferred that most pre-service English teachers have fair perception that 'analyzing' is part of the higher order thinking skills. This condition is similar to their perception on the 'evaluating' aspect although the mean of 'evaluating' is higher. Both means fall in the same category of moderate or fair perception.

Further, in 'analyzing' aspect, the mean of the experienced pre-service English teacher is 14.14 while the mean of the inexperienced pre-service

English teacher is 13.67 (Table 4.1 and Picture 4.4). The standard deviation is 2.87 and 2.05 respectively (Table 4.1 and Picture 4.4). Those scores show that the experienced pre-service English teachers gain higher scores both mean and standard deviation. Comparing between the perception of the experienced and the inexperienced pre-service English teachers on the ‘analyzing’ aspect, the gap of the mean and the standard deviation score is quite meaningful. Although they have fair or moderate perception, it indicates that the experienced pre-service English teachers are more convinced that the ability to make comparison and contrast is also the indicator of higher order thinking comparing to the inexperienced pre-service English teachers. The standard deviation of the experienced pre-service English teachers is higher than of inexperienced pre-service teachers. Very possibly that there are some experienced pre-service English teachers have better perception on this aspect while the majority of the inexperienced pre-service English teachers are in the category of fair perception.



Picture 4.4 The Perspective on ‘Analyzing’ aspect

Briefly comparing the perception of the pre-service English teachers on the three aspects of higher order thinking skills above, it can be concluded that in general the pre-service English teachers possess moderate perception.

## CONCLUSION

The finding of the current study concludes that although the pre-service English teachers are quite familiar with the concept of the higher order thinking skills in ELT, the application of that concept at ELT classroom remains questionable. The finding of the study confirms that dealing with the familiarity with the specific and practical concept of the higher order thinking skills is still fair. Therefore, it is strongly suggested that the future study investigate the practices of ELT at the classroom dealing with the practices of the English teachers. In addition, the ELT curriculum should accommodate the specific training on designing and practicing the concept of the higher order thinking skills at English classes.

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