ENGLISH TEACHERS' EFFICACY IN USING PEDAGOGICAL TECHNIQUES TO PROMOTE HIGHER ORDER THINKING SKILLS

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Abstract

The 21st-century learning demanded students not only to be academically competent but also to master some crucial soft skills needed in today's challenging world. Promoting and implementing HOTS becomes crucial things to do in the learning process. This study aimed to find out English teachers' efficacy in using interactive, critical thinking and meta-cognitive pedagogical techniques to promote HOTS in the learning process. This study employed a survey research method. The research approach used was descriptive quantitative. Five Likert-scale questionnaires are used as the instruments for collecting the data. The questionnaires are distributed through the online form to 15 in-service English teachers at the secondary high school level. Furthermore, the data were analysed using a quantitative descriptive data analysis technique. The results of this study indicated that English teachers have high self-efficacy in using interactive, critical thinking, and meta-cognitive pedagogical strategies to promote HOTS in the learning process. The result of this study provided a preliminary understanding about the English teachers' self-efficacy level in using some meaningful pedagogical techniques to promote HOTS in this 21st-century learning. This understanding will lead to the impact of their implementation in a real teaching context. Exploring their practice in the real classroom context in implementing HOTS becomes a crucial issue for further study.

Keywords: *High Order Thinking Skills (HOTS), English Teachers' Efficacy, Pedagogical Techniques*

INTRODUCTION

The framework of 21st-century learning demanded students to master some important soft skills; creative, innovative, critical thinking, problem-solving, communicative, and collaborative skills (www.p21.org). Gaining these skills, of course, will support students to survive in today-challenging era. This is also in line with the goal of the National Education System of Indonesia that "… to develop students' potential to become a critical, creative, and independent citizen" (*Sistem Pendidikan Nasional*, 2003). This all means that fostering student's ability to think at a higher level in this century has been such an important issue. The educational systems should also be redesigning to match with those needs. Fortunately, the educational stakeholders in Indonesia have realized this issue. As the result, they launched the Curriculum 2013 (K13). This curriculum gave much space for students to develop their soft skills by proposing the principle of higher order thinking skills (HOTS) in teaching and learning process. HOTS-based learning was believed as an effective way to develop students' important skills in the 21st-century learning.

The existence of HOTS in Curriculum 2013 has been implemented in both science and social study, including English (Tanujaya, Mumu, & Margono, 2017; Siswoyo & Sunaryo, 2017; Jannah, 2018)**.** In the secondary school level, teaching English using HOTS achieved by using the Scientific Approach bridging with some relevant methods such as project-based learning and problem-based learning. As stated by Ariyana *et al.* (2018), HOTS-based learning can be achieved by using some learning models such as inquiry learning, problem-based learning, and project-based learning. In this case, teachers have to be creative to use various kind of teaching approaches as well as pedagogical techniques. The purpose is to engage students in meaningful activities and to promote HOTS in the learning process. This becomes important since they are the people who facilitate the success of learning.

Regarding these challenges, English teachers, as the facilitator of the learning, must be confident with their capabilities to use their pedagogical techniques to promote HOTS in the learning process. Personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances are defined as self-efficacy (Bandura, 1977). Judgments of self-efficacy also determine how much effort people will expend and how long they will persist in the face of obstacles or aversive experiences. Besides, Bandura mentions that in applying existing skills strong self-efficaciousness intensifies and sustains the effort needed for optimal performance, which is difficult to realize if one is beleaguered by self-doubts. The stronger the perceived self-efficacy, the higher the goal people set for themselves and the firmer is their commitment to them (Bandura, 1993). In addition, people who have a high sense of efficacy visualize success scenarios that provide positive guides and supports for performances (Bandura, 1993). In other words, the judgment of the teachers about their capabilities in applying such pedagogical techniques plays important roles in determining the success of promoting HOTS in the learning process.

Considering the current phenomena of HOTS, this paper aimed to investigate English teachers' efficacy in using pedagogical techniques to promote HOTS in the teaching and learning process. This becomes important since the positive teachers' efficacy in using pedagogical techniques such as interactive, critical thinking, and meta-cognitive pedagogical technique will lead to the success of the implementation of HOTS. Eventually, the result of the study is expected to contribute as a preliminary description of the extent to which the English teachers' self-efficacy in using various teaching techniques to support the implementation of HOTS in the 21st-century learning.

Higher Order Thinking Skills (HOTS)

Various definitions of HOTS have been proposed by some experts. Anderson and Krathwohl (2001) as cited in (Brookhart, 2010) define HOTS as the "top end" of Bloom's taxonomy: analyze, evaluate, and create or, in the older language, analysis, synthesis, and evaluation. Whereas, Thomas and Thorne (2009) describes that higher-order thinking is thinking level is higher than memorizing or restating the facts and requires students to do something about the facts, to comprehend them, to draw the

conclusion from them, to connect them with other facts and concepts, to categorize them, to manipulate them, to put them together in new ways, and to apply them as new solutions to new problem. The students that achieve the level of higher order thinking skill are believed to have critical thinking skill and will be able to create problem-solving skills.

The concept of HOTS initially was taken from Bloom's Taxonomy (Bloom, 1956). It refers to the cognitive domain that categorizes the level of cognitive process in educational settings. This concept helps teachers or instructional designer to determine the level of learning included in the instructional design. At the first time, it was introduced, the original Taxonomy used to classify the curricular objectives and test items (Krathwohl, 2002). The emerge of original Taxonomy provided definitions for each of six major categories in the cognitive domain: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation (Krathwohl, 2002). The categories in the Bloom taxonomy for cognitive development are hierarchically ordered from concrete to abstract (Pappas, Pierrakos, & Nagel, 2013). The mastery of the simpler category was requisite to master the more complex categories.

In 2001, Anderson and Krathwohl and some people with expertise in the areas of cognitive psychology, curriculum and instruction, and educational testing, measurement, and assessment revised the original taxonomy (Anderson *et al.*, 2001). In the revised Bloom's Taxonomy, the three original categories were renamed and the order of two was interchanged. The structure of the cognitive process dimension in revised taxonomy was: Remember, Understand, Apply, Analyze, Evaluate, and Create. Besides, the structure of the knowledge dimension of revised Taxonomy was factual knowledge, conceptual knowledge, procedural knowledge, and the metacognitive knowledge. Krathwohl (2002) mentioned that *factual knowledge* was the basic elements that students must know related to their subject matter to solve the problem. *Conceptual knowledge* refers to the interrelationships among the basic elements within a larger structure that enable them to function together. While, *procedural knowledge* is how to do something; methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.

Teachers' Self-efficacy

The construct of self-efficacy has a relatively brief history that began with Bandura's (Bandura, 1977) publication of "Self-Efficacy: Toward a Unifying Theory of Behavioral Change". Since then, the theory has been applied in various disciplines and settings. Efficacy beliefs influence how people feel, think, motivate themselves, and behave. It produces these diverse effects through four major processes (Bandura, 1993). They include cognitive, motivational, affective, and selection processes.

a. Cognitive processes
   Human's behavior is regulated by forethought embodying cognized goals. Personal goal setting is influenced by self-appraisal of capabilities. The stronger they perceived self-efficacy, the higher the goal challenge people set for

themselves and the firmer is their commitment to them. Moreover, people who have a high sense of efficacy visualize success scenario that provides positive guides and supports for the performance. In contrast, people who doubt their efficacy visualize failure scenarios and dwell on the many things can go wrong.

b. Motivational processes

Self-belief of efficacy plays the important role in self-motivation. People motivate themselves and guide their actions anticipatorily by the exercise of forethought. They form beliefs about what they can do. They anticipate likely outcomes of prospective actions. They set goals for themselves and plan the course of action designed to realize valued futures.

c. Affective processes

People's belief about their capabilities affect how much stress and depression they experience in threatening or difficult situations, as well as their level of motivation. This is the emotional mediator of self-efficacy belief (Bandura, 1993).

d. Selection processes

Belief about personal efficacy enables people to choose the activities and environment. People tend to avoid the activities or situation that they believe exceed their coping capabilities, but they readily undertake challenging activities and select the situations they judge themselves capable of handling. By the choice they make, people cultivate different competencies, interest, and social networks that determine life courses.

Regarding teachers' self-efficacy, Gibson and Dembo in (Bandura, 1993) find that teachers who have a high sense of instructional efficacy effuse more time to academic learning, provide help to the students who had difficulty in learning, and give praise to their accomplishment. In contrast, those who have a low sense of instructional efficacy spend more time on nonacademic pastimes, readily give up students if they do not get quick results, and criticize them for their failures. Thus, the teachers who have a strong belief about their instructional efficacy create more experience for the students and those have self-doubt construct classroom environment are likely to undermine students' sense of efficacy and cognitive development.

Interactive, Critical thinking, and Metacognitive Techniques

Teachers play a vital role in the teaching and learning process. In 21st-century learning, one of their main roles is to promote HOTS in the classroom. Promoting HOTS can be done by using some pedagogical techniques: interactive, critical thinking and meta-cognitive techniques. Interactive pedagogical techniques can be defined as two ways process in which students are expected to be actively get involved in the learning activities. Butefish in (Wang & Zhu, 2013) stated that interactive teaching is the process whereby teachers and students communicate for the successful completion of a learning task.

Critical thinking is reasonable and reflective thinking that focused on determining what to believe or do (Ennis, 2011). It is also frequently described as a metacognitive process, comprising various sub-skills such as analysis, evaluation, and inference that, when

used appropriately, increases the chances of delivering a logical conclusion to an argument or solution to a problem (Dwyer, Hogan, & Stewart, 2014). Critical thinking strategy refers to the use of cognitive skills to increase the probability of a desirable outcome. In the 21st-century learning, critical thinking becomes the main foundations of educational reforms supported by the students-centered approach in addressing the global challenge across the world (Ab Kadir, 2017). Another term of the pedagogical strategy used in this study is metacognition. This term refers to higher order thinking skills that involve more active control over the thinking processes involved in learning (Iftikhar, 2014). Metacognition is also the term to mention about "thinking about thinking". It is well known as an internal, psychological process that is necessary for effective learning and problem solving (Flavell in Perry, Lundie, & Golder, 2018). Metacognitive techniques are beneficial to be implemented in the teaching process. since it can use to enhance students' comprehending skills as well as to motivate students in the learning process. This technique also helps students to monitor, plan, assess and control their performance when performing a specific task, as well as techniques that actively help them to solve new problems (Perry et al., 2018).

Previous Studies

Recently, HOTS become such an interesting topic in Indonesia and leads some researchers to explore some researches. These have been developed not only at the secondary education level but also at the higher education level. Although, some resources mentioned that the implementation of HOTS in Indonesia is still at the infant stage compared to other countries. Such research in HOTS conducted by Ahmad (2018), he mentioned that implementation of HOTS and LOTS in teaching-learning process in Indonesia, especially in high school is not in sequence. It should be from LOTS to HOTS (remembering, understanding, applying, analyzing, evaluating, and creating). When conducting research about HOTS, a researcher should focus on the teacher's understanding and perception of LOTS and HOTS or how the teachers make a lesson plan based on HOTS and LOTS.

Afandi *et al.* (2018) studied 120 pre-service science teachers to identify their perception about HOTS in the 21st century. He concluded that pre-service science teachers are aware of the importance of HOTs and learning that emphasizes the aspects of HOTs to face the challenges of the 21st century and the skills of HOT that will be required to becomes a teacher in the 21st century. Additionally, Rapih and Sutaryadi (2018) studied the understanding, implementation, and challenges of 35 elementary school teachers in implementing HOTS. By using closed questionnaire, they concluded that most of the respondents have already understood the concept of HOTS. Moreover, the respondents agreed that HOTS could already be implemented in the elementary school. Regarding the challenges, most of the respondents had difficulties in designing and implementing HOTS-based evaluation, delivering of learning material, designing instructional media, designing learning tools and difficulty in the process of compiling teaching materials.

In the context of teaching in senior high school, one of the studies about HOTS in the classroom context is carried out by Suprapto *et al.* (2017) By taking 38 students of the vocational high school as sampling, he conducted the research because the quality

of outputs of the senior vocational schools has not met the competency. The result of his study concluded that using problem-based learning strategies in the teaching-learning process are better than conventional strategies. More than that, it can improve the students' critical thinking that they can implement in problem solving, teamwork, and self-confidence. Moreover, HOTS is really useful for students for their future career since it is important to win job position over other candidates, find solutions for the problem faced in the workplace, and create good teamwork. Those aspects will support the future career of the students.

Sutarto (2017) studied the concept and principles of competency-based instruction (CBI) and HOTS and its integration with HOTS in CBI in a vocational high school (SMK). He concluded that HOTS are beneficial not only for the students but also for teachers, schools, community, business, and industry. They benefit the students to be critical thinking, creative to solve real-life problems, and prepares them to be more employability. For the teacher as the main player in teaching and learning process, they have to be the positive aspiration to HOTS and have adequate knowledge and skills in teaching HOTS. Besides, schools, community, business and industry would have technical and vocational school graduates who are creative, innovative, problem solver, and productive citizen.

Another study about HOTS in higher education in Indonesia had been conducted by Tanujaya *et al.* (2017), he studied the relationship between HOTS and students' academic performance in Mathematics Instruction. He concluded that there is a significant relationship between HOTS and students' academic achievement. Moreover, Students with the high level of HOTS are expected to succeed in their next study in the study program of mathematics education. Students who have high HOTS tend to get high GPA in Mathematics Instruction, whereas those with low HOTS tend to have low GPA. Therefore, the value of HOTS can be used as an indicator in the selection of new students.

Compared to the previous studies mentioned earlier, the present study certainly differs in the term of context and variable aspects. The study about teachers' efficacy in promoting HOTS in English language teaching context in Indonesia is still limited. The variable aspects that will be explored are interactive, critical thinking, and meta-cognitive pedagogical techniques. This study will offer new insight about English teachers' efficacy especially dealing with the promotion of HOTS-based learning in ELT context.

METHOD

This study employed a descriptive quantitative approach using a survey research method to know English teachers' efficacy in using pedagogical techniques to promote HOTS in the classroom. The study involved 15 English teachers using a purposive sampling. All teachers have received sufficient training on the implementation of the Curriculum 2013 (K13) and the integration of HOTS in the learning process. The instruments used for this study is a five Likert-scale questionnaire from *strongly disagree* to *strongly agree*. A total of 17 items of questions distributed through online form. The instruments were adapted from (Le, 2013) and have been met the criterion of content validity and reliability from the experts. Furthermore, the data were analyzed using SPSS to know the mean and standard deviation of each variable. The criteria used

to interpret the data were adapted from Wiersma (2000) as cited in Afandi *et al.* (2018) as shown in Table 1.

Table 1. The interpretation of the mean score

Mean Score	Interpretation
1.00–2. 49	**Low**
2.49–3.49	**Medium**
3.50–5.00	**High**

FINDING(S) AND DISCUSSION

The Respondents' Profile

The questionnaires were distributed to 20 English teachers. At the end of the survey, only have 15 respondents completed answering the questionnaire. They came from various backgrounds. The table 2 below shows the characteristics of respondents.

Table 2. The profile of respondents

No		Data Respondent	Total	Percentage
1.	Gender	Male	4	26.67%
		Female	11	73.33%
		Total	15	100.00%
2.	Educational background	Master	3	20.00%
		Bachelor	12	80.00%
		Total	15	100.00%
3.	Level of teaching English	Senior high school	7	46.67%
		Junior high school	8	53.33%
		Total	15	100.00%
4.	Teaching experience	0 -5 years	9	60.00%
		5-10 years	6	40.00%
		Total	15	100.00%
5.	School area	Urban	6	40.00%
		Suburban	9	60.00%
		Total	15	100.00%

As shown in Table 2, the majority of the respondents was the female with the percentage 73.33% and male respondents were 26.67%. The educational background of the respondents showed that 80% of them have Bachelor degrees, and 20% of others have Master degrees. In addition, 46.67% of the respondents were senior high school English teacher and 53.33% of them were junior high school English teachers.

Furthermore, Table 2 also showed that 60% of the respondents have experienced in teaching English for less than 5 years and 40% of them have more than 5 years' experiences of teaching English. It means that most of them have sufficiently experienced in teaching English. Moreover, 60% of them taught in the suburban school area, while 40% taught in the urban school area.

English Teachers' Efficacy in Using Interactive, Critical Thinking, and Metacognitive Pedagogical Techniques to Promote HOTS

Based on the result of data analysis as shown in Table 3, the mean score of English teachers' efficacy in the aspect of using interactive pedagogical techniques is in

the high level (M = 3.84; SD = 1.09). Likewise, in the aspect of using critical thinking pedagogical techniques, the total of mean score is in the high level (M = 3.90; SD = 0.93). In the last aspect, meta-cognitive techniques, English teachers' efficacy is also in the high level (M = 3.90; SD = 0.99). Zohar (2015) mentioned that **i**n order to use metacognition successfully when teaching HOTS, teachers need a robust knowledge of elements of metacognition, that is, of the pertinent meta-cognitive knowledge and skills related to HOTS. To summarize, the mean score of English teachers' efficacy from three aspects is in the high level (M = 3.88; SD = 0.99).

Table 3. The descriptive statistical analysis of English teachers' efficacy in using interactive, critical thinking, and metacognitive pedagogical techniques to promote HOTS

Aspect	Variables	N	Mean	Std. Dev	Interpretation
Interactive pedagogical techniques	1. Implement "think, pair, and share"	15	3.87	1.06	High
	2. Show students how to study in multiple ways	15	3.93	1.03	High
	3. Create effective student discussion groups that have students of varying abilities	15	4.00	1.07	High
	4. Create effective student discussion groups that have students of the same abilities	15	3.40	1.35	Medium
	5. Allow students to demonstrate what they have learned in creative ways	15	4.00	0.93	High
	Mean Total		3.84	1.09	High
Critical thinking pedagogical techniques	1. Put students in groups to solve problems, discuss answers, and apply information to particular situations	15	3.80	0.94	High
	2. Reflective thoughts	15	4.00	0.76	High
	3. Encourage students to "think out loud" when answering questions	15	3.80	1.15	High
	4. Ask questions from simple factual recall to more analysis and synthesis	15	4.20	1.08	High
	5. Model contextual examples when discussing content material	15	3.73	0.88	High
	6. Evaluate student learning by allowing students to provide real-life examples	15	3.87	0.74	High
	Mean Total		3.90	0.93	High
Metacognitive techniques	1. Use multimedia to enhance student learning	15	3.87	0.83	High
	2. Show students how to take notes by using guided notes	15	3.80	0.86	High
	3. Hold class debates	15	4.07	0.96	High
	4. Use a peer review system in my classroom	15	4.07	0.96	High
	5. Evaluate student learning through student-created multimedia formats	15	3.87	0.92	High
	6. Show students how to create their own test items to prepare for exams	15	3.73	1.10	High
	Mean Total		3.90	0.94	High
	Total Average		3.88	0.99	High

As shown in Table 3, the results indicated that English teachers have high self-efficacy in using interactive pedagogical techniques. They have the ability that related to implementing "think, pair, and share" technique, show students how to study in multiple ways, create effective students' discussion group, and allow students to demonstrate what they have learned in creative ways. Interactive technique becomes

important pedagogical skill needed for 21st-century teachers. By using this technique, teachers will give students this meaningful interaction in the classroom. For example, they will actively participate in the educational activity, simulate professional situations, perform creative and research tasks, engage in discussions with fellow students, learn to substantiate their point of view using arguments, discuss the strategies for effective behavior in conflict situations (Kutbiddinova, Eromasova, & Romanova, 2016). This result of the study is in line with some researches that imply that teachers with an assured sense of self-efficacy set the tone for a high-quality classroom environment by planning lessons that advance students 'abilities and making efforts to involve them in a meaningful way (Chacón, 2005; Zee & Koomen, 2016).

In the critical thinking pedagogical techniques, the results showed that English teachers have high self-efficacy to use some following techniques: putting the students in a group to solve the problem, discussing the answer and applying information in a particular situation, asking the students to do reflective thought, encouraging the students to do "think out aloud" when answering a question, asking questions from simple factual recall to more analysis and synthesis, modelling contextual examples when discussing content material, and evaluating student learning by allowing students to provide real-life examples. Critical thinking has become the main issue in the field of education to prepare students for the 21st-century learning (Ab Kadir, 2017; Stupple et al., 2017; Alnofaie, 2013; Petek & Bedir, 2018). On the other hand, it was clearly stated that the proper cultivation of these skills in learners was heavily dependent on teachers (Petek & Bedir, 2018). Therefore, English teachers with high self-efficacy will give the positive assumption that they will implement the critical thinking pedagogical techniques in their classroom to promote higher order thinking skill needed in the 21st-century learning.

The last aspect to know in this study is English teachers' self-efficacy in using meta-cognitive pedagogical techniques. Metacognitive deals with the knowledge about persons, tasks, and strategies. Metacognitive skills are the skills and processes used to guide, monitor, control and regulate cognition and learning (Zohar & Barzilai, 2015). The use of meta-cognitive techniques to embrace HOTS is crucial. From the results of the study, it showed that English teacher successfully had high self-efficacy in using such kind of meta-cognitive pedagogical techniques. They feel that they have already had the ability to use multimedia to enhance student learning, show students how to take notes by using guided notes, hold class debates, use a peer review system in my classroom, evaluate student learning through student-created multimedia formats, and show students how to create their own test items to prepare for exams. Their self-efficacy will describe what Bandura (1993) mention that "the stronger the perceived self-efficacy, the higher the goal people set for themselves and the firmer is their commitment to them. Their high commitment to use this meta cognitive technique will lead to the success of promoting HOTS since it is a key source to enhance students' learning, perception skill, motivation, and performances (Iftikhar, 2014).

CONCLUSION

The 21st-century learning requires students not only to be academically competent, but they also have to master some crucial soft skills needed in today's' challenging world such as creative, innovative, critical thinking, problem-solving, communicative, and collaborative skill. These become what underlies the

implementation of HOTS-based learning in Indonesia. The success of HOTS certainly cannot be separated from the role of teachers since they determine the success or failure of HOTS in the learning process. Therefore, understanding of the extent to which teachers' efficacy regarding their capabilities in using pedagogical techniques to promote HOTS become crucial. Teachers' high self-efficacy will lead to positive impacts on the implementation of HOTS in the classroom. The results of this study have shown a positive description of English teachers' efficacy in using pedagogical techniques to promote HOTS in the learning processes.

English teacher's efficacy level in the aspect of using interactive pedagogical strategies shows a high level (M = 3.84; SD = 1.09). Additionally, in the aspect of using critical thinking strategies, their self-efficacies are also in a high level (M = 3.90; SD = 0.93) and the last aspect, meta cognitive pedagogical techniques, is also at a high level (M = 3.90; SD = 0.94). Overall, the mean score of English teachers' efficacy from three aspects is in the high level (M = 3.88; SD = 0.99). These results indicated that teachers are fully confident with their abilities to use interactive, critical thinking, and meta cognitive pedagogical strategies to promote the implementation of HOTS-based learning in the classroom.

The study about HOTS in the field of English language teaching in Indonesia is still at the infant stage and needs further study. The results of this study certainly can be used as a preliminary description of the extent to which the English teachers' self-efficacy in using various teaching techniques to support the implementation of HOTS-based learning. The further crucial thing to do is exploring the implementation of English teacher self-efficacy and HOTS based-learning in the real classroom context. This becomes beneficial so that evaluations can be carried out in the form of teachers' training as well as evaluation for government policies.

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