

INTEGRATING HIGHER-ORDER THINKING SKILLS (HOTS) TO INCREASE STUDENTS' PRODUCTIVE SKILLS

Siti Zahroh

¹ Universitas Islam Malang, Jl. M.T Haryono 193, Malang 65144, Indonesia

zahrast65@gmail.com

Abstract

The purpose of this paper is to give an overview about some theories and studies on the integration of higher-order thinking skills (HOTS) to increase English as Foreign Language (EFL) learners' productive skills. In this 21st century education, critical thinking skill (CTS) or higher-order thinking skills (HOTS) has been identified as one of the fundamental skills that students need especially in the learning process. Helping the students in developing this skill becomes one of the teachers' duty. However, this issue has not grabbed serious attention especially from English language teachers. Many teachers are not aware of the importance of teaching higher-order thinking skills which can prepare the students to live in the Industrial Revolution 4.0 era. Regarding those problems, this paper will explore what higher-order thinking skills is, why higher-order thinking skills can increase students productive skills and how to implement higher-order thinking skills to develop students' writing and speaking skills. Several previous studies highlighting the benefits of higher-order thinking skills in learning English and research findings of the effect of higher-order thinking skill for English learners are the main core as the next discussion. Then, this paper finally presents the conclusion and pedagogical implication as the closing remark.

Keyword- hots, productive skills, writing skill, speaking skill

Introduction

In this 21st century education, critical thinking skill or higher-order thinking skills (HOTS) is-critically required in order to be successful in this modern educational society. Yoke et al., (2015) say that the aim of higher-order thinking skill is to introduce school activity and education system that encourage the students to apply, analyze, evaluate, and think in creative ways. Since the last decade, this skill has been implemented in all school levels and all school subjects either in Asian or European country. The education purpose today is to shape the students to fit 21st century elements schooling. Yee et al., (2016) also emphasize that higher-order thinking skills assist the student to develop their thinking quality which can also upgrade their skills and values and apply their knowledge for solving problem and making right decision. Therefore, higher-order thinking skills is integrated in all school subjects including English language.

In the field of English language teaching, higher-order thinking skills aid the students to more easily learn English language particularly in productive skill; speaking and writing skills. It is in line with Collins' (1991) argumentation saying that the integration of critical thinking in language learning will develop students' writing and speaking skills (as cited in Setyarini et al., 2018). Moreover, speaking and writing skills are very valuable in terms of communication. Communication between people is very complicated that is where speaking and writing skills take role. Those skills influence students to produce and convey information and ideas well. Combining productive skills and higher-order thinking skills then will help the students on delivering the students' idea more easily both in spoken and written form.

Despite the positive effect of higher-order thinking skill, the development of higher-order thinking skills in Indonesia is still slow. It can be seen from PISA (The Program for International Students Assesment) worldwide ranking 2015-2016 data, which stated that Indonesia is ranked 62 out of 70 countries which have high quality of cognitive thinking or critical thinking skill. Regarding this data, Indonesian teachers still need improvement in terms of thinking quality skills to help the students facing this Industrial 4.0 era. Thus, the integration higher-order thinking skills to increase students' English productive skills are crucial since it is very urgent.

Productive Skills

There are four basic skills in English learning: speaking, writing, listening and reading skills. Those are divided into two main groups: (1) receptive skills with two subgroups: listening and reading, and (2) productive skills with two subgroups: speaking and writing. Based on British Council Teaching English website, listening and reading are called receptive skills because the students do not need to produce language through those skills, rather they only receive and understand it by themselves. On the other hand, speaking and writing are called productive skills or active skills because the students need to produce something by either spoken or written language. Osman and Kassim (2015) mention that receptive skills allow the students to easily understand the oral or written content, such as textbooks, documents and speech. However, productive skills are significant as they help the students to communicate with other people well, for instance, when the students do their presentation in front of class and when the students complete their report task.

Golkova and Hubackcova (2014) point out that receptive skills appear as the first skill that students need to comprehend when they learn new languages since most students start mastering new language through listening the accents of the language and reading text about the culture or background of the language itself. This skill does not pressure the students to produce anything actively. Differently, productive or active skills force the students to create an outcome of those types of skills. In relation to this statement, Hossain (2015) articulates that productive skills can measure the students' understanding and how far the students have learned the material. Hence, it can be concluded that speaking and writing have a crucial role as they influence the students to practice their English skills in their life either inside or outside class.

Higher-Order Thinking Skills

Benjamin Bloom has published his theory, Bloom's Taxonomy, about human thinking skills from the lower stage to the higher stage at the beginning of 1956 in three range; 1) *Cognitive* area which is related to the mental ability in terms of knowledge, 2) *Affective* considered as the mental ability in terms of emotional or feelings and 3) *Psychomotor* which is considered as the physic ability proceeding from mental activity. Those classifications were then divided by Anderson and Kratwols into six criteria; remembering, understanding, applying, analyzing, evaluating and creating with categorization remembering, understanding and applying as Lower-Order Thinking Skills (LOTS) and analyzing, evaluating and creating as Higher-Order Thinking Skills (HOTS) (Anderson & Kratwols, 2016). *Remembering* is considered as the ability to recall the knowledge from the long-term memory. In this stage, the students only absorb the knowledge and information while the teachers explain the material in front of class. How far the students get and remember the point of the material depends on the strategy that teachers use inside the class and it can be seen from how well the students define and describe the data or information. Remembering and recalling the material are not enough, the students also need to comprehend the material well so that the students did not forget the material easily, *Understanding* is the ability to create a new meaning from knowledge that students get and they can construct their own understanding widely. It is in line with Rezai et al., (2011) stating that the students who have good comprehension can consider the alternative of the explanation by their own words. Students are also able to associate the concept that they had known before with the new concept that they get for their better understanding. Further, the students demand to

apply their understanding in a real situation, *Applying* is the skill to apply or use the knowledge that the students have learnt in a new work place. In helping the students to apply their knowledge, the teachers can divide the students into small groups and give them problem to solve. From the problem given, the students automatically analyze it in order to solve the problem properly. The ability to enlighten the information or knowledge is called *Analyzing*. The students need to separate the material and the concepts into some part and analyze the data whether it is a fact or inferences to make a right decision. It is undeniable that every group member has their own ideas how they solve the problem. To choose which one is the match decision that can solve the problem, the students need to evaluate their friends' ideas; therefore, the ability to assess the value of new knowledge for a given purpose is needed which is considered as *evaluating* skill. After passing those process, the students demand to create product by combining those skills. In this stage, the students had passed *Creating* part considered as the capability to bring all that elements together in order to create and make a real product. The teacher can lead the students to make a product freely. For example, the students present their own ideas in a creative way, such as; in form of magazine or newspaper designed or in oral presentation like usual way. It has to be highlighted that students are given a privilege on how they want to create their product creatively. Regarding those complicated skills mentioned above appears a new high level of analytical skill terminology which has been hot issue in education world nowadays called higher-order thinking skills (HOTS).

Not only that, Brookhart (2010) also classify the higher-order thinking skills into three parts: (1) higher-order thinking skill in terms of *transfer*, (2) higher-order thinking skills in terms of *critical thinking*, and (3) higher-order thinking skills in terms of *problem solving*. In terms of *transfer* students not only own the knowledge and the skills, but also apply the knowledge to the real situations outside the class. The ability to decide what to do by considering the reason, investigation, observation and comparison from several point of view is higher-order thinking skill in term of *critical thinking*. And in terms of *problem solving* is the skill which is considered as skill owned by a student or person to find a proper solution of their problem that cannot be simply solved only by memory or formula (Collins, 2014). Therefore, higher-order thinking skills is the relation of cognitive and metacognitive ability that can be expanded by solving problem, evaluating, analyzing ideas and identifying elements needed to draw conclusion or make a proper decisions.

Why Integrating Higher-Order Thinking Skills?

It has been one of the modern issues that higher-order thinking skills fit students' necessity today's education. That notion is supported by Setyarini and Ling (2019) who state that higher-order thinking skills help the students prepare their secondary education. Chaffe (1985) and Paul (1995) also emphasize the critical thinking benefit on their report claiming that improving students' critical thinking ability is the essence of substantial education (as cited in Rezaei et al., 2011). Higher-order thinking skills assist the students to compete at the international level and to face the new world of education which has been more sophisticated year by year. This skill acknowledge as the destination of learning process. With this skill, the students are expected to have a highly-skilled, knowledgeable and good manner. A project which is held by American schools on various approaches revealed that HOTS give positive long term learning impact for the students rather than conventional rote teaching (Yoke et al., 2015). Limbach and Waugh (2010) as cited in Setyarini and Ling (2019) also point out that students who own higher-order thinking skills can accomplish the intellectual freedom and handle their life easily without burdening other people.

Integrating students' higher-order thinking skills automatically prevent the students to make assumption and interpret something easily without thinking. Rather, a critical thinker person has an ability or proficiency in evaluating every statement conveniently (Rezaei et al., 2011). It is also prevent the students to accept the wrong or inaccurate information. With higher-order thinking skills, the students are trained to analyze the information that they had whether it is a real fact or not, so they will not think one-sidedly since the ultimate purpose of integrating higher-order thinking skill in class activity is to help the students to have a correct judgment of something with considering some necessary evidence (Rezaei et al., 2011).

Why Integrating Higher-Order Thinking Skills in Productive Skills?

Connolly (2000); Davidson (1998); Davidson and Dunham (1997) point out that the use of critical thinking (higher-order thinking skills) is recognized as a main capability to maximally enhance students' academic language (as cited in Margana & Widyanoro, 2017). From that notion, the relationship between thinking and language learning particularly in writing and speaking skills are highly significant. Higher-order thinking skills includes some active skills which with those active skills the students can handle their productive task (Margana &

Widyantoro, 2017). It is believed that to improve students' productive skills also need to improve their higher-order thinking skills. HOTS is the skills of analyzing, applying, evaluating, creating, interpreting and putting them all together with some concept and information that they owned and associated them into a good conclusion and express those thinking either in words or in oral explanation. Based on the report of Faragher and Huijser (2014) HOTS helps the students' metacognition and awareness of how they are supposed to express their thought into words which also automatically develop students' writing ability. They also admit that if students can evaluate their writing in terms of analysis and thinking skills, they might have positive attitude and benefited educationally (Faragher & Huijser 2014). Rosli and Maarof (2014) also emphasize that HOTS acts as a guide for the students to develop their ideas on what they want to write. With HOTS the students are also trained to improve their speaking ability through explaining their ideas and attempting to state what is on their mind to their friends. Setyarini and Ling (2019) find that the students who have critical thinking skills are willing to deliver their ideas freely in front of class without worrying their friends' judgment or mistake. Those advantages will be owned by the students when the students integrate their higher-order thinking skills with English productive skills.

How to Implement HOTS in English Productive skills

There are some method to implement higher-order thinking skills in class room activity to increase students' English productive skills. Because speaking skill and writing skill are different subject, it also has different treatments to be implemented as well.

Implementing HOTS through Storytelling

According to Wright (2003) and Setyarini and Ling (2019) there are three phases to implement HOTS with storytelling in classroom activity

1. Pre-activity before story

How the teachers begin the activity determines the success of the telling story. It also develops students' understanding and participation to storytelling performance (Yang et al., 2016). The teachers also need to provide some stories from students' cultural background in order to make the students easier to understand the story. As Muslim et al., (2009) suggestion, the local stories help the students to comprehend the story

easily and encourage them to create their own story (as cited in Setyarini et al., 2018). The aim of this stage is to lead the students familiar with the story.

2. Activity during story

In this phase, the teachers are expected to maintain the students' intention through the story and guide them to understand the story well. Yang et al., (2016) describe that during the telling of the story the students receive the information passively and it will build their imaginative thought to associate with their previous knowledge, part of higher-order thinking skills in terms of understanding. It is supported by Setyarini and Ling (2019) who argue that storytelling stimulates the students' comprehension skill.

3. After story phase

This stage determines whether the students comprehend the story well or not. The teachers can ask the students' question about the story and give the students opportunity to deliver their respond regarding the story. This activity leads students' participation inside the class actively. Teachers can use some strategy to train their speaking ability, such as shadowing, summarizing, or retelling story in front of class (Setyarini & Ling, 2019). Based on bloom's taxonomy theory, after story phase is mostly dealing with higher-order thinking skills in terms of reflection, evaluation, making decision, problem solving and creating (Bloom, 2001; Brookhart, 2010)

Implementing HOTS through some Strategies

There are some ways that can be applied by the teachers in the classroom to improve students' English productive skills while integrating their higher-order thinking skills.

Questioning

Baston, 1981; McKenzie, 1972; Taba, 1966 as cited in Singh et al., (2018) have been proven that higher cognitive processes can be led by higher level question. The open-ended question stimulates the use of students' higher-order thinking skills. Setyarini et al., (2018) describe that open-ended students require the students to think critically by giving their opinion, comment and reasons. When the students ask a question about the material that teacher give, it means that students create connection between their previous concept and the new concept that they get which give them better comprehension of a concept. The more question students asked the more

information they are going to get which also increase their writing ability regarding many ideas they possess.

Inference

Another strategy that can be used by the teachers is guiding the students to infer the knowledge to the real problem. The teachers can bring a current or trending issue to the class and the students are demanded to write an essay regarding problem solving based on the issue given by the teachers. In this stage, the students are trained to apply their knowledge in a real situations. Based on Johnson and Thomas (1992) report, one of the successful learning strategies is helping the students to classify their knowledge using visual media and aid maps which can visually exemplify the students concept and the relationship between it (as cited in Singh et al., 2018).

Previous Study

To give a wide insight about integrating higher-order thinking skills to improve students' productive skills various previous studies related to this are discussed below

The first research is carried out by Setyarini and Ling in 2019. The study which is entitled "*Promoting Higher-Order Thinking Skills in Storytelling for Teaching English to Young Adolescent in 21st Century*" aimed to find how HOTS in storytelling promoted to teach English to young adolescent. The researcher used an ethnographic study with three instruments applied to obtain the data with three classes of three different Junior High Schools in Northern Bandung, West Java, Indonesia as the participants. The three instruments used for collecting the data namely: classroom observation, interview with the teachers and students, and document analysis in the forms of lesson plans and students written works. This study reveals that when HOTS started to be promoted to teach English to young adolescent throughout all learning sessions with some strategies: questioning, mind-mapping, brainstorming, role-playing, discussing, and creating new ideas composed in storytelling, the students felt enjoy since they could present their ideas critically without feeling worry of making mistake.

The study which was conducted by Setyarini, Muslim, Rukmini, Yuliasri, and Mujiyanto in 2015 which included year eight students in two different junior high schools in Northern Bandung, West Java, Indonesia is the second research. The purpose of this study is to

investigate the development of HOTS strategies and possible challenges through storytelling to improve seventh grade students' speaking ability. The research under title "*Thinking Critically while Storytelling: Improving Children's HOTS and English Oral Competence*" collects the data from classroom observations, interviews the students and the teacher, and analysis of lesson plan with two cycles of Classroom Action Research (CAR). Based on the data obtained, this study shows that by using those methods the students are encouraged to practice speaking well through giving opinion, comment, and imagination while evaluating and analyzing the story.

The third study is conducted to explore the impact of using HOTS questions in improving students' writing skill. The research is carried out by Rosli and Maarof in 2018. The title of this research is "*The Effect of Higher-Order Thinking Skills (HOTS) Questions in Improving ESL Pupils' Writing Performance*" and a total of 30 year five students which are eleven years old from four classes which is classified as rural area schools in Malaysia participated in this research. This study used a quasi-experimental research and collect the data through a quantitative method with purposive sampling method. From the data collected, it is found that the participant were able to organize their thought and ideas better before starting writing their essay, and it also showed that the pupils were able to expand their imagination and reasoning skills as well as their creativity in their writing activity.

The study entitled "*ESL Students' Perceptions of the Use of Higher-Order Thinking Skills in English Language Writing*" which is carried out by Kaur and Ganapathy in 2014 is the last study. A total of 120 form two ESL students from three intact classes in Penang, Malaysia participated in this study and the students were led to experience the writing project from group-based work both independently and collaboratively. The instruments which is used by the researcher was focus on group interview. The results of this study revealed that the students' writing performance are developed as well as their researching and personal skills. The students also felt engaged in active learning (HOTS Activity) and experienced learner autonomy.

The studies mentioned above shows positive impact of integrating higher-order thinking skills in order to enhance the students' both speaking and writing skills. Not only that, HOTS as well as critical thinking skills also improve others students skill, such as their personal skills

and creativity. Therefore, integrating higher-order thinking skills in schools' activity are needed.

Conclusion and Recommendation

Based on the theories and previous studies, some points can be concluded that the number of studies which have been done, the implementation of higher-order thinking skills in classroom activity plays an important role especially in English language classroom and it also gives a plenty of benefit for both students and teachers. Not only that, many teachers still not aware of the importance of teaching higher-order thinking skills which can assist the student to strengthen their English productive skills. The teachers find it difficult to implement HOTS in EFL classroom since the students need to make a product even in form of speech or in form of text (Kurniawati & Mursyid 2017). Thus, we can conclude that the future teachers not only have to be proficient in English level, but they also need to have English skills mastery as well as critical individuals thinking who can reflect, criticize, analyze and evaluate their own teaching way to encourage students with the highest level of thinking. Since higher-order thinking skill is very fundamental in enhancing students' English productive skills, it is intended to be implemented in English writing and speaking skills classroom activity.

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