Developing Project-Based Writing Assessment Module to Stimulate Students’ Critical Thinking and Creativity

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Abstract

This study aimed at developing project–based writing assessment module to stimulate the students’ critical thinking and creativity since most of teachers get difficulty in developing a higher-order thinking assessment. This study used Research and Development where the subject of this study was the students of X IPS 2 of SMAN 12 Semarang in the academic year of 2017/2018. Questionnaire, interview, observation checklist, and test were used as the instrument in collecting the data. The teacher collaborated with the researcher in developing the project-based writing assessment module. After the module was revised based on the experts’ suggestions, the main field testing was conducted. The module was utilized during the treatments. The students’ score improvement of the writing skill was 67.55 to 80.11, critical thinking skill was 67 to 78, and creativity skill was 65.39 to 78.55. Moreover, the paired sample test results show that there is significantly difference between the result of pre-test and post-test. In other words, there is a significant improvement in the students’ writing skill, critical thinking skill, and creativity skill after they used project-based writing assessment.
INTRODUCTION

Assessment cannot be separated from teaching and learning activities. Assessment is an ongoing process including a much wider domain such as assessing the students' performances, students' responses on a question, students' comment, etc. that can be done by self, teacher, or other students (Brown, 2004, p. 4). The teachers use assessment to measure whether the students are able to complete the required standard of the learning process or not.

Assessment has to be relevant and appropriate with the learning goals in the used curriculum. White (2004, p.2) stated that the aims of the curriculum are (1) to develop the students' spiritual, moral, cultural, mental and physical at the school and even the society; and (2) to prepare the students in facing the world challenge in the future. Each country has a curriculum as a tool which is used for meeting the demand of their society and the world. The curriculum in Indonesian has changed several times which have an important role in the development of English language teaching in Indonesia. It is the way to fulfill the demand and the need of the society. In addition, the importance of curriculum has stated in the Regulation of Republic Indonesia number 20 of 2003 about National Education System that curriculum is a set of plan and arrangement which contains learning objective, content, learning material and method used for the guidance of the implementation in the learning activity to achieve the objective of education.

The characteristic of the 2013 curriculum is learner-centered where the students have to learn individually or by small group discussion, so they can build up their knowledge, experience, and skill through the scientific approach. Based on Permendikbud number 81A of 2013 about curriculum implementation, scientific approach consists of five steps, namely observing, questioning, experimenting, associating, and communicating. However, the teacher can apply the steps of scientific approach randomly as long as based on the learning objectives.

One of the objectives of the 2013 curriculum is the students are able to think creatively and critically. The 2013 curriculum emerges Higher Order Thinking Skill (HOTS) at all levels of education in order to enhance students' understanding and critical thinking. Moreover, the 2013 curriculum integrates Penguatan Pendidikan Karakter (PPK) and 4C namely creative, critical thinking, communicative, and collaborative. In this case, the students have to find the information by themselves rather than getting information from the teacher. The process of getting information needs students' critical thinking and creativity which belong to HOTS. Brookhart (2010, pp. 3-8) stated that the definition of higher-order thinking is divided into three categories. Those are higher order thinking as a transfer, critical thinking, and problem-solving. Mainali (2012, p. 7) stated that HOTS has great benefits for the students, such as they will have a long-term memorization toward the information since they have a clear understanding of the conceptual knowledge, and they can use the information in a new context easily.

Both critical thinking and creativity are the important skill to be developed to prepare learners in facing the 21st century challenges. Critical thinking is an individual intellectual thinking skill including reflective and reasonable thinking that is focused on making a decision on what to believe or do (Ennis, 1985, pp. 45). In addition, Sarigoz (2012, p.5315) stated that critical thinking comprises reasoning, analyzing, problem-solving, scientific thinking, judgment, and deciding accurately. Whereas, creativity is the ability to innovate and helps prepare pupils for future challenges in work and life. Moreover, Marshall (1974, p. 10) in Khan (2011, p.111) stated that creativity is the ability to create one’s own product or experience by exploring the information and ten form a unique thing.

Based on the revised Bloom’s cognitive taxonomy, HOTS consists of the top three elements namely, analyzing, evaluating, and creating. The students' ability is more than just
memorizing the pattern. This is the teachers’ challenge to stimulate students to think critically and creatively in major skills (listening, reading, speaking, and writing). In order to know whether the students have achieved HOTS or not in their learning process, the teacher needs assessment. Nevertheless, most of the English teacher gets difficulty in designing and developing the higher-order thinking assessment. Jaedun, Hariyanto, & Nuryadin (2014) and Wati, Bharati, & Hartono (2014) pointed out that the teachers have an inadequate understanding of the principles, procedures, and techniques of the authentic assessment, and the students’ tasks do not show the authentic tasks. Moreover, the teachers also have difficulties in implementing the authentic assessment, formulating the indicators, designing the assessment rubric for the skills, and gathering the scores from multiple measurement techniques (Retnawati, Hadi, & Nugraha, 2016; and Maba, 2017). Several studies (Abosalem, 2016; Mohamed & Lebar, 2017) pointed out that authentic assessment is able to measure higher-order thinking skills and improves the students’ performance.

English Foreign Language learners (EFL learners) like Indonesia students have difficulty in performing the writing skill. It is because writing skill focuses on both linguistics accuracy and content organization (Celce-Murcia, 2001, p. 213). The quality of students’ writing depends on the students’ knowledge and teacher’s assessment. Since HOT should emerge from the students’ writing skill, the teacher needs a relevant assessment to stimulate their critical thinking and creativity.

Making some project of writing assessment is an alternative way that can be done by the teacher. Project Based Learning (PjBL) is a learning method which uses a project as the media. Bell (2010, p.39) who stated that PjBL is an innovative approach where students being critical either in their own inquiry learning or small group discussion and being able to create projects which reflect their knowledge. Furthermore according to Lee (2005 also see Indrianti & Istanto, 2013; Wachyu & Rukmini, 2015; Gunawan, Sahidu, Harjono, & Suranti, 2016; Mali, 2017; Anazifa & Djukri, 2017; Hasani, Hendrayana, & Senjaya, 2017) Project-based learning (PjBL) is an instructional approach in a form of constructivist and collaborative model including contextual and meaningful learning in a real life situation.

To create a product, the students need to do some activities such as exploring, assessing, interpreting, synthesizing, and informing. PjBL includes six steps, namely basic question decision, project plan, schedule arrangement, monitoring, test the project, and evaluation (Kemendikbud, 2014).

Therefore, the writer conducted a research and development on developing the project-based writing assessment module that can stimulate the critical thinking and creativity of senior high school students.

METHOD

This research used Research and Development (R&D) design in developing the project-based writing assessment module to stimulate students’ critical thinking and creativity. This research developed assessment products of writing skill which based on the demand of the 2013 curriculum. Project Based Learning is used to assess students’ writing skill which includes critical thinking skill and creativity in order to prepare students for the needed future skills. The model of the R&D is a procedural model which is descriptive emphasizing the steps namely creating a product, planning, action, and assessing products. These Research and Development simplification steps are research and information collecting, planning, developing a preliminary form of product, validating the design, main product revision, main field testing, and final product revision.

The subjects of the study were English teachers and tenth grade students of SMA N 12 Semarang in the academic year 2017/2018. The school was chosen because the 2013 curriculum has been implemented in all classes, especially tenth grade. In this study, the researcher used
four kinds of instruments to collect the data. There were observation, interview, questionnaire, and test.

RESULT AND DISCUSSIONS

In this phase, the researcher presents the findings and discussions of the developing project-based writing assessment module to stimulate students’ critical thinking and creativity. The sections in this part will follow the statement of the research objectives.

Teacher’s Assessment on Students’ Writing

The lesson plan was arranged based on the 2013 curriculum by showing the activities which consisted of discovery learning and problem-based learning method. Nevertheless, there was no rubric of assessment used in assessing the students' knowledge and skill. The teacher had not applied project-based learning in his lesson plan yet, notably when assessing the students’ writing skill. The students just wrote whatever they want to write without any specific instruction from the teacher that could stimulate the students’ higher order thinking skill. In other words, the teacher got difficulty in developing a writing assessment which can stimulate students’ critical thinking and creativity. The teachers also have difficulties in implementing the authentic assessment, formulating the indicators, designing the assessment rubric for the skills, and gathering the scores from multiple measurement techniques (Retnawati, Hadi, & Nugraha, 2016; and Maba, 2017). It means that nowadays some teachers still get hard in designing the assessment rubric for each skill especially writing skill.

In this phase, the researcher observed the teacher’s documents and teaching-learning process to know the realization of the routine assessment which was used by the English teacher, especially in assessing the students’ writing ability. The teacher used textbook or LKS as the daily assessment to get the students’ score. The conducted assessments did not enclose the students to have HOTS. The students tended to be passive and could not develop their critical thinking and creativity. Moreover, the teacher did not apply any project-based writing assessment in the teaching-learning process. The students just memorized words, sentence patterns, and emphasizing reading skill. By looking for the narrative text from the internet, the students tended to copy the story instead of paraphrasing or creating a new story. In assessing the students’ writing, the teacher just assessed the grammar, choice of words, and also text originality.

Type of Assessment to Stimulate Students’ Critical Thinking

Today’s assessment must be able to stimulate students’ critical thinking since one of the objectives of the 2013 curriculum stated that the students must be able to think critically. In this case, the students have to find out the information by themselves rather than getting information from the teacher. In other words, the learners-centered must be implemented in a class rather than teacher-centered. The students can find information from various sources.

The teacher said that discussion was one of the activities that can stimulate the students’ critical thinking. The discussion was done in a small group where all members shared their opinion, comment, suggestion, or ideas of their own. They learned from each other’s argument and got a new insight to enrich their understanding of something or a case. By doing so, the students could share their opinion and they actively followed the lesson. It is a line with the theory of Vygotsky that learners can only achieve their internal development processes by cooperating with their peers which are competent people (Vygotsky, 1978 in Lok and Chiu, 2012). Moreover, the research finding from the study which was conducted by Wang and Seepho (2017) also stated that group discussion was effectively improved the students’ higher-order thinking skill. It means that this finding agrees with the theory which still exists till now that by doing group discussion the students can develop their critical thinking.
In addition, an assessment which could stimulate students' critical thinking must contain open-ended questions in order to make the students be more open-minded. The example of open-ended questions is using why and how instead of what, where, when, etc. Hence, the students will have intellectual curiosity and find out the knowledge from many sources until they are satisfied. While answering the students' question, the teacher should not directly answer due to make the students think more about that and finally can answer their question by themselves. Giving clues was one of the activities for enhancing the students' writing skill.

Therefore, the researcher and the teacher developed the project-based writing assessment to stimulate the students' critical thinking, especially in their writing skill.

Type of Assessment to Stimulate Students’ Creativity

In stimulating the students' creativity, the teacher has to be innovative first. The teacher needs to be a good planner, executor, and evaluator. As a good planner, the teacher designs the lesson plan well by suiting the teaching method or technique with the competence that will be achieved. The teacher must be an open-minded person in order to develop the students' creativity.

As a good executor, the teacher must give attention to the students' characteristic during the teaching process. The teacher is not only good at planning the lesson but also in realizing the plans. The learner-centered is a must during the teaching learning activity. Sometimes the teacher can invite the students to go outside the classroom to observe the surroundings in order to make the students have a broad mind. In case of writing, the students write sentences or even a text based on their direct observation. As a good evaluator, the teacher must evaluate the lesson with constructive feedback in order to make betterment for the next teaching-learning activity.

The teacher has to give the students an innovative instruction. For example, the teacher gives the students a story then the students continue the story with their own version. The key to this activity is giving freedom to the students without any exception as long as it is related to the learning activity. There is no mistake in the process of learning. The teacher must appreciate all the students’ learning process.

In addition, the students like a picture as the media for learning English especially, for students’ writing skill. Therefore, the researcher and the English teacher developed project-based writing assessment that can stimulate the students' creativity through a series of picture called comic strips since the students got difficulty in learning English especially in writing skill and the teacher had never developed any project-based writing assessment that can stimulate their creativity.

Development of Project–Based Writing Assessment to Stimulate the Students’ Critical Thinking and Creativity

The first step to do this phase was by studying the module of the 2013 curriculum implementation written by Kemendikbud. The researcher and the English teacher learned about the characteristics of the 2013 curriculum although the English teacher had ever followed the 2013 curriculum training.

In developing the HOTS, the questions or instructions should be based on the cognitive level 4, 5, and 6 or C4, C5, and C6. The high-level questions foster students to be able to analyze, evaluate, and create something based on the learning objectives. The C4 category contains the questions such as the students are able to differentiate, discriminate, focus, select, organize, find coherence, integrate, outline, structure, attribute, and deconstruct. While the C5 category contains the questions like checking, coordinating, detecting, monitoring, testing, critiquing, and judging. Last, C6 category contains the questions such as generating, planning, designing, producing, and constructing. Hence the writing assessment module and lesson plan were designed according
to the top three cognitive skill level of Bloom’s taxonomy namely C4, C5, and C6.

The teacher collaborated with the researcher designed a lesson plan and developed project-based writing assessment based on the students’ need. They also adapted and adjusted the critical thinking indicators from the Association of American Colleges and University. Those indicators are explaining issues, collecting information (evidence), solving problem, student's position (perspective, thesis, or hypothesis), and concluding and relating outcomes (implications and consequences). While the indicators of creativity skill are generating idea, acquiring competencies, taking risks, innovative thinking (novelty or uniqueness), and creative production and innovation.

In order to stimulate students' critical thinking, the assessment module facilitates with pictures which include in the observing activity. By observing the pictures and the given instructions, the students can find a fact, problem, ideas, solution, etc. which indicates that they are thinking of something critically. In other words, media such as a picture or short video can stimulate the students to be critical in thinking. Rokhayani and Utari (2014) pointed out that a picture is funny, interesting, and a concrete thing which can support the teacher’s explanation and make the students understand easily. The students will be helped in mastering the lesson since pictures foster the students to think creatively and critically. Moreover, in order to stimulate the students' creativity, the teacher used various techniques such as round table, jigsaw, etc.

The students’ creativity will be developed if their teacher is a creative facilitator. In stimulating the students’ creativity, the students created their own pictures and continued the story by changing the resolution of the real story based on their imagination. The teacher tended to appreciate the entire students project since they can learn from the process of learning. The teacher gave a freedom for the students in doing their project since there was no mistake in learning activity.
The project-based writing assessment was judged by some experts. The activities in the project-based writing assessment module have been revised into high-rise activity since the students’ higher order thinking skill did not come up directly. The content of the module was designed based on the 2013 curriculum, so the activities should be integrated into four language skills. In addition, the exercises or the task should be added in order to make the students accustomed to HOTS questions. In addition, the project-based writing assessment product was revised based on the expert’s suggestion. The indicators were divided into more detailed. For example, the indicators 3.8.1: analyze the social function, generic structure, and language features of oral and written narrative text by giving and asking information related to simple popular legend based on the context of its use; it was divided into some indicators, such as 3.8.2: classifying the past tense used in the text, etc. In addition, the texts in the module had been chosen based on the local culture or the story from central java if one of the objectives was cultural. After the assessment module was revised based on the suggestions from the experts, the researcher and the English teacher did the main field testing of the assessment module. Pre-test, treatments, and post-test were conducted to implement this assessment module.

### The Effectiveness of Project-Based Writing Assessment to Stimulate Students’ Critical Thinking and Creativity

Pre-test was conducted at the first meeting to know the early condition of the students’ critical thinking. The mean score of the students’ critical thinking in the pre-test was 67.55. After conducting the pre-test, the teacher did treatments by using the module which had been designed by the teacher collaborated with the researcher. Next, the post-test was conducted in the last meeting or the seventh meeting. The mean score of students’ critical thinking in the pre-test was 80.11. The students’ mean score of critical thinking skill was highly improved.

| Table 1. Students’ Mean score of Pre-test of critical thinking skill |
|-----------------------------|-----------------------------|
| Mean Pre-Test | Mean Post Test |
| 67.55 | 80.11 |

The result of the students’ creativity in the pre-test showed that they got difficulty in developing their creativity. The mean score of the students’ creativity in the pre-test was 65.39. After they got the treatments from the teacher using project-based writing assessment, the students’ creativity improved. The students’ creativity in the post-test was 78.55.

| Table 2. Students’ Mean score of Pre-test of creativity skill |
|-----------------------------|-----------------------------|
| Mean Pre-Test | Mean Post Test |
| 65.39 | 78.55 |

Besides the students’ critical thinking and creativity result, the students’ writing skill were calculated in order to know how effective is the project-based assessment module in improving the students’ writing skill. The result of the students’ writing ability in the pre-test and post-test can be seen in table 4.13. The students’ mean score of the pretest was 67.55. Many students had difficulty in doing the pre-test and their score were under the passing grade of English subject in SMAN 12 Semarang, which were 75. After getting the treatments, the mean score of the students’ writing skill improved till 80.11.

| Table 3. Students’ Mean score of Pre-test of writing test |
|-----------------------------|-----------------------------|
| Mean Pre-Test | Mean Post Test |
| 67.55 | 80.11 |

Moreover, based on the result of paired sample test result proved that there is a significant difference between pre-test and post-test result because the sig. (2 tailed) value (0.00) is lower than 0.05. There is significant different between the result of pre-test and the result of post-test. It can be concluded that Project-based
writing assessment module is effective to be implemented in stimulating the students' critical thinking and creativity. It is a line with some previous studies that PjBLL provides the students' learning opportunity and foster their higher order thinking skill (Lee, 2005). In addition, PjBLL succeeded in building the students' creativity with a deep comprehension of the subject matter (Akinoglu, 2008).

CONCLUSION AND SUGGESTION

The English teacher had already known and applied the project-based assessment, but he never did any development of project-based writing assessment which can stimulate the students' critical thinking and creativity. In addition, he got difficulty in designing the rubric assessment for assessing the students' writing skill. He tended to use LKS as the media in assessing the students' competence.

The assessment should be based on the 2013 curriculum characteristics and it should refer to the top tree level of Bloom’s cognitive taxonomy namely analyzing, evaluating, and creating. Group discussion is one of the teaching strategies that can stimulate students' critical thinking and creativity. In addition, an assessment which can stimulate students' critical thinking must contain open-ended questions in order to make the students to be more open-minded.

The indicators of critical thinking skill are explaining issues, collecting information (evidence), solving problem, student's position (perspective, thesis, or hypothesis), and concluding and relating outcomes (implications and consequences). Whereas, the indicators of creativity skill are idea generation, acquiring competencies, taking risks, innovative thinking (novelty or uniqueness), and creative production and innovation.

The teacher collaborated with the researcher in developing the project-based writing assessment module. After the module was revised based on the experts’ suggestions, the main field testing was conducted. The module was utilized during the treatments. In stimulating the students' critical thinking and creativity, comic strips project was conducted.

The students' score improvement of the writing skill was 67.55 to 80.11, critical thinking skill was 67 to 78, and creativity skill was 65.39 to 78.55. Moreover, the paired sample test results show that there is significantly difference between the result of pre-test and post-test. In other words, project-based writing assessment is effective to be implemented to improve students' writing skill, critical thinking skill, and creativity skill.

Although, the teachers especially the English teacher need to develop another project-based assessment module which can stimulate students' critical thinking and creativity as one objectives in the 2013 curriculum. The other researchers can use this study as one of their references in conducting their further research on developing project-based writing assessment for other genres or at other educational levels.

REFERENCES


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