



Developing Authentic Assessment Rubric Based on HOTS Learning Activities for EFL Teachers

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Abstract. This study aimed to develop an authentic assessment rubric based on HOTS learning Activities for EFL Teachers in 6th grade of the elementary school in Buleleng Regency. These activities were developed based on the syntax of 21st-century learning models such as discovery-based learning, problem-based learning, project-based learning, and task-based language learning method. The design and development method was used as the research method. The research model consisted of four phases which are Analysis, Design, Development, and Evaluation. Teachers and students in 6th grade of elementary school were the subjects of this research. Researchers developed the rubrics based on the blueprint which considered schools' syllabus. The data for the analysis phase was obtained from teachers' and students' interviews, document studies, and lesson plan observation. The analysis result showed that authentic assessment rubrics were needed for teachers and students. The expert judgments categorized the rubrics as excellent media. It is hoped by using authentic assessment makes students possible to perform related skills which are needed in real life.

Keywords: Authentic Assessment Rubric · Elementary school · 21st Century learning model

1 Introduction

Industry 4.0 makes a huge revolution to the technology [1]. Technology becomes more sophisticated and it affects all sectors in our world. It demands many innovative things and people should follow the changes to sustain [1]. The development of technology requires us to follow the advance of technology itself.

One of sectors that should be become more innovative is educational sector. Education should use technology as well [3]. Moreover, having knowledge is no longer enough nowadays [6]. How we make use of the knowledge becomes more important. Therefore, students should learn how to make use of the knowledge that they already had by gaining 21st century skills. Those skills consist of critical thinking, creativity, collaboration, and communication. These four skills are crucial to be gained for each of student [6].

21st century learning has a further demand rather than previous learning [2]. In 21st century students are demanding to not only acquire knowledge by listening to teachers'

explanation but they have to acquire the knowledge by themselves under teachers' supervision. Other than acquiring knowledge, students also have to use their knowledge and apply it into the real-life situation. The processes of applying knowledge that have learnt are important in order to activate students' authentic skills which are highly needed in today's era. During the process of applying it, students are hoped to use their critical thinking, collaboration and creativity too. By utilizing internet sources, students can do online collaboration. They can conduct online meeting and work in a team to finish the project [2].

One thing that teachers can do to improve the quality of education is by implementing assessment in the classroom [5]. The uses of assessment make teachers able to collect lot information from students as well as how good a certain method of learning to be applied in the classroom. This information will be collected and use to make a right decision in the learning process. To obtain information that is the most appropriate to the student's skills, teachers should apply authentic assessment [5].

There are many kinds of assessment can be implemented by teachers [1] Because of that, teachers and students must be able to select which type of assessment is appropriate to be used to support their learning process. One of assessment that can be proposed to meet the demands of 21st century learning is Authentic Assessment. Authentic assessment is a process of obtaining information from students by giving the real life-world situation which contains of real-life problems in it [11]. Therefore, to do the authentic assessment, students will perform not only their knowledge but they will utilize the knowledge to solve the problems. During the process of completing the task, teachers can assess students' affective, psychomotor, and cognitive domain [11].

Authentic assessment allowed both teachers and students know their learning progress [12]. They will know how far they have understood the material since they have to remember the material and practice it through several task based on real-life situation. By using authentic assessment, it makes students possible to perform related skills which are needed in real life. Those skills are 4C skill which already explained in the 21st century which are communication, creativity, critical thinking, and collaboration [12].

In order to implement authentic assessment, rubric of assessment should be design really well [1]. Rubric is one of instruments in assessment. It is used to scoring students' quality in learning process [1]. The way of scoring itself can be varied. It can be in form of numbers, description of ability, or detail explanation of students' quality.

Rubric has important role in learning process especially in implementing authentic assessment [1]. It can be beneficial for both teachers and students. For teacher, rubric can make them easier in assessing students' performance because in rubric it is consist of score range and also criteria that should be achieved in learning process. By using rubric, teachers have a set of goals and expectation to the students and it can drive the learning process more systematic. Besides that, the judging or the assessment process becomes more consistent and accurate. For students, rubrics help them to know what the goals that teachers are expected to them are. When students know the learning goals, they will also try to achieve the goals. As one of the assessment instruments, rubric allows students to get exact feedback for their progress [1].

Feedback will be very effective when it is given directly after the assessment process [8]. It allows students to know directly what they should improve. Then, in the next activity they know how to work with their strengths and weaknesses based on the previous feedback. By giving the feedback through the rubric, students can analyze by themselves what their weaknesses are in certain activity and how to improve it. And at the same time, they will also analyze what their strengths are and try to maintain it. They will use their critical thinking to analyze their own learning process by the feedback given [8]. By knowing their ability based on teachers' point of view, they know in what aspects they should improve their ability [1]. If these things happen, learning process will become more achieved oriented. Both teachers and students have the same goals, and achieve the goals together. Students also become more confident by the time they improve their skills [1].

However, due to the Covid-19 outbreak, all learning process becomes fully online. Online learning in this era is no longer an option but it is needed. Online learning must be done in accordance with the government regulation to limit the spread of Covid-19. Besides, it makes the learning process become more students-centered, and make it more flexible. Students can access or learning everywhere and every time in their convenience time and place. However, face to face learning in the classroom is also highly important to make students feel the social interaction with friends and the teacher. It causes more problems that were faced by teachers and students [3]. The class becomes boring and not as engaging as they come to the classroom. Students have limited space to implement or practice what they have learned. Meanwhile, as we know together the implementation of the knowledge is a matter in 21st century learning.

Moreover, in online learning not all students have sufficient device and stable connection [7]. They will feel isolated because they do not have friends or teacher to directly give feedback to them. When they feel isolated, they have less motivation to learn and it can make them do not understand the material. In teacher's side, online learning gives them a lot of challenge and it requires more effort. Not all teachers can dedicate themselves in online learning. Teachers who do not dedicated their effort and time will probably not plan the learning process well and it can affect the teaching quality. Teachers found difficulties in conducting authentic assessment in online learning [4]. Teachers have to conduct students' affective, cognitive, and psychomotor by conducting project, oral test, written test, and many more. It is hard for teachers to assess and observe students' progress virtually.

Some problems were obtained from the preliminary observation conducted in some elementary schools in Buleleng. First, there is no assessment for the students learning process. It was only focused on the students' learning product. Second, the assessment used is still inappropriate without using any rubric. The teachers only gave scores, and feedback was rarely given. The students found it difficult to improve their English skills since they did not get an explanation about their mistakes. Third, in online learning, the teacher could not monitor the students, and it turned out invalid and unreliable because the student's integrity was questioned. As a result, the assessment process cannot run as what curriculum expected.

Based on the problem identified, authentic assessment rubric to help the teachers and the students' needs to be developed. Through the use of authentic assessment rubrics,

the assessment could be more objective because it has several aspects with different ranges of score and description. Besides, the students were also provided with feedback to know about their English ability. Most importantly, it could be used in an offline and online learning context. Furthermore, the rubrics were designed based on four teaching methods: discovery, problem-based learning, project-based learning, and task-based language learning to maximize the implementation of the 21st learning.

The purpose of this study were developed as follows (1) to investigate the criteria used in designing authentic assessment rubric for discovery learning, problem-based learning, project-based learning, and task-based language learning in offline and online learning for grade, (2) to design and develop authentic assessment rubrics for assessing 6th –grade students who are taught using discovery learning, problem-based learning, project-based learning, and task-based language learning in offline and online learning.

2 Method

This study was conducted by using Design and Development method. In line with [10], design and development (D&D) is a type of pragmatic research methodology that aims to create empirically instructional and non-instructional tools and products with systematic studies that make efforts design, development, and evaluation. This research developed the instructional product by following several stages including analysis, design, development, and evaluation.

The research conducted in SD Laboratorium Undiksha Singaraja and SD N 3 Banjar Jawa. These schools are two of the model schools in Buleleng regency. They have good learning system. Both schools also applied Curriculum 2013. So, the author chose this school as a research setting which can later be used as a reference and direction for learning English with a good assessment and can be a role model for other schools in the future.

In order to collect the data, there are several stages in this research; each-stage has its own instrument and method in collecting data. In the first stage, namely the analysis stage, researchers carried out the process of collecting and analyzing data by observing and interviewing. After obtaining data from observations and interviews, the next stage is design. The development phase of the assessment rubric is the most fundamental. At the development stage, the data were analyzed using a checklist of expert judgment to see the feasibility of the product being developed. The last stage, namely evaluation, it was the results of the effectiveness test from experts and teachers.

Overall, the data obtained in the form of numbers were analyzed quantitatively while other data obtained during interviews and observations were processed qualitatively. The data obtained from expert judgment were analyzed quantitatively by adopting the formula from [9]. There are 3 experts and 2 teachers that are involved to see the validity of the developed product.

3 Results and Discussion

To find out the criteria for designing appropriate rubrics in accordance with 21st century learning, direct observations and interviews with teachers and sixth grade students in

elementary schools were conducted. From these findings, it is known that the conditions in the field are different from the theories on how assessment activities should be carried out. In designing a rubric on the assessment there should be several parts that become a parameter in assessing the quality of students. Those parts are the description of the task, level of students' achievement, the required knowledge and skills in the task, and the last one is specific description of each level or also known as feedback [8]. The number of level of students' achievement and knowledge and skill that are needed is depend on the task itself. It can be different from one task to another task. Those four parts of rubric are used as the guide line to develop good rubric.

There are six steps that can be suggested to help teacher designing their rubric, such as:

1. Determine the learning method

First of all, teachers should determine the learning method that will be used in the classroom. The learning method affect assessment that can be used in the class and it definitely affect the rubric as well. When teachers determine the learning method, they have to consider whether the learning method suit with the topic, classroom situation, and students' ability.

2. Focus on the specific details

After determining the learning method, teachers will focus on the specific details of the assignment that will be given to the students. Teachers also decide what are they expect from conducting a certain assignment.

3. Make the description of the task

This is the first thing that appears in the rubric which leads students to know what they should do with the task. As its name, task description, describe specifically and clearly what the purpose of the task. Task description consists of the types of the task, students' activity, the duration to accomplish the task, the expected result of the task. Description of the task is different regarding to the learning method in the learning process. Sometimes, for some task, the description will be very detail and it is too long to be put in the rubric. Another way to cope this problem is, rubric should contain the tittle to grab students' attention and give the general idea of what will they do. The description will be given in another page, or put in syllabus.

4. Arrange the levels of students' achievement

Students should accomplish every task as well as possible. From several skills and knowledge that are required, students might perform it in different levels. Each student will also perform the task differently. Due to this possibility of variation, rubric should provide different levels of students' achievement from the lowest to the highest level. The description of each level can be described by using one until two words whether it is verb or adjective. It has to keep in mind that the words should be in a positive term even though it is in the lowest level. The used of negative term can discourage students' motivation in learning. In an old rubric, the levels are usually consisted of three levels only. However, in the newest rubric, the levels consist of five. It provides more detail information of students' quality in accomplishing the task.

5. Decide the required knowledge and skills

To accomplish the task, students are required to perform some knowledge and skill as well. The knowledge and skill are depending on the task itself. Rubric must provide the detail of knowledge and skill that students should perform and at the same time give the percentage on each skill. Giving the percentage to each knowledge and skill is important to emphasis which one is highlighted in this task. By knowing this percentage, students can adjust their process in accomplish the task.

6. Describe each required knowledge and skills

In this part, rubric provides the specific description of how good and poor students can perform the required knowledge and skills. A good rubric should provide the description on each level. Start from the best level of performing the knowledge and skills until the lowest level of performing the required knowledge and skills. By providing each side of it, it allows students to get the specific feedback of their performance.

From those six stages, it can be concluded that a good rubric should make the assessment process easier for teachers [14]. It should make teachers easier to provide the feedback in a convenience time for the students. The feedback also becomes more objective, consistent, and specific. A good rubric drives learning process achieve the purpose of the learning. At the same time good rubric helps students to determine specific skill that they should perform. Help students to analyze their own learning process and know what should be maintained and improved.

3.1 The Development of Authentic Assessment Rubric

This research is classified as design and development research. In this study, an authentic scoring rubric for grade 6 elementary school in Buleleng was developed using innovative discovery learning, problem-based learning, project-based learning, and task-based language learning methods. The steps for developing this rubric followed the development stages of [10], which consisted of Analysis, Design, Develop and Evaluation.

1. Analysis

The analysis is based on the interview of the teachers in Sekolah Dasar Negeri 3 Banjar Jawa and also Sekolah Dasar Laboratorium Undiksha. There are some points had been gathered through interview session, such as: types of the assessment used in teaching English for sixth grade in both schools, how the teachers assess the students, the learning method used in the classroom and the learning activity in the classroom. The result of the interview has shown that the teachers in both schools are actually trying to apply the authentic assessment as many as possible. They also said that they are trying to give the project to the students and try to involve the students as much as possible in the learning process. This action is actually referring the innovative learning method which focus to the students-centered and give students project to activate their 21st century skills which are communication, collaboration, critical thinking, and creativity. However, the missing point in applying this method is teachers only assessed the final product from the students. They did not assess the process of making the project itself. It is because the teachers in both schools are the only one who are teaching English in that school. It makes them hard to assess the

process since it will be time consuming moreover, the students that they handle also more than the capacity which they can actually handle. Therefore, the assessment used is still traditional assessment which is only giving the score of students' projects.

Besides doing the interview, the researcher also analyzed the document obtained from both schools. The documents are the syllabus and the lesson plan. The syllabus itself is accordance to curriculum 2013 and it has four theme and eight sub themes in which two sub theme appeared two times. From this topic, the researcher developed the eight topics with four kind of innovative learning method which are Project Based Learning, Problem Based Learning, Discovery Based Learning, and Task Based Learning. The assessment types used are Project Assessment, Product Assessment, Performance Assessment, and Self-Assessment.

2. Design and Develop

The analysis phase is done and proceed to the design and development stages. To design the rubric first thing which were being make is the blueprint. The blueprint is consisting of the theme, sub-theme, learning activity, learning method, and assessment type. Each sub theme has different learning activity. After the learning activity is chooses. The next step is deciding the learning method and assessment type which is suitable for the learning activity. The learning activity then, followed the syntax of learning method which has been chosen previously. The assessment types are two including one self-assessment for the students.

After making the blueprint, the next step is developing the rubric itself. The authentic assessment rubrics for sixth grade consist of eight sub-themes. The first rubric which was being designed was the rubric for Discovery Learning Method. To make this rubric, researcher should follow the syntax of the learning method. Each method has its own identical. For Discovery Learning Method, it focuses to discover something. Students have to make hypothesis and test the hypothesis itself. At the end, students will find whether the hypothesis is accepted or not. Therefore, researcher should provide possible answers for the students to test the hypothesis itself.

The next rubric is for Problem Based Learning. Identical feature from this method is students are given the problem that they have to solve by themselves. Therefore, the researchers gave the problem in the teacher's instruction and also provide the expected solution.

The third rubric is for Project Based Learning. As its name the identical feature form this method is at the end students should make a project with team. Therefore, researcher provides the project which students should make. Before making the project, students are also guided to understand the topic first then they can make the project. The rubric is for Task Based Learning Method. This method is focuses on the language used. Therefore,

The learning activities which also in accordance to the syntax are required students to speak or write. In this method, students also required to strengthen their understanding by giving them the additional assignment. The additional assignment can be product assessment or performance assessment.

The rubric is consisting of authentic assessment rubric for the process which followed the syntax of learning method and authentic assessment rubric for the product or performance. It depends on the type of assessment used. And the last

Table 1. The Categories in Rating the Prototype Rubric

Score	Criteria
$X \geq 121.5$	Excellent Media
$94.5 \leq X < 121.5$	Good Media
$67.5 \leq X < 94.5$	Average Media
$40.5 \leq X < 67.5$	Below Average Media
$X < 40.5$	Poor Media

one is self-assessment for the students which also consist of self-assessment on the process and self-assessment on the product or performance.

The rubric developed in this study was able to assist teachers in implementing the authentic assessment. Rubrics were developed with the applicable curriculum and syllabus. The application of the rubric used innovative teaching methods and was equipped with instructions for teachers. In addition, the rubric was supported with appropriate teaching materials or resources. Then, the rubric could also be used to assess students learning process and the learning product or students' performance. Self-assessment was also provided that students could use to reflect on themselves to improve their abilities.

3. Evaluation

There were three expert judges involved in the process of developing the rubric. They gave suggestions and comments for the rubric's quality improvement. To evaluate the rubrics, [9] formula was used. There were five criteria of the rubric quality, excellent, good, average, below average, and poor.

Based on the expert judgments result, the score from the first expert was 129, the second expert was 123, and the last expert was 131. The final rubric belongs to the "excellent" rubric criteria. To ensure the quality of the rubric, the teachers, as the users of the rubric, also evaluated the rubric. The teachers involved were the teachers that the researcher has interviewed. The first teacher's score was 120, which was categorized as a "good" rubric. Meanwhile, the second teacher gave 128, identified as an "excellent" rubric. Based on the evaluation from the expert judges and the teachers, the rubric could be implemented in the teaching and assessment process (Table 1).

4 Conclusion

This research aims to know the criteria of developing good authentic assessment rubric and how to develop it. From the literature review that the researcher did, it can be said

that there are six criteria which we should follow. They are determining the learning method, focus on the specific details, make the description of the task, arrange the level of students' achievement, decide the required skill and knowledge, and describe each required skill and knowledge. After knowing the criteria then the researcher can develop the authentic assessment rubric. The first step is by making the blueprint. The blueprint is basically the guideline for the researcher to develop the rubric. In the blueprint, it consists of theme, sub-theme, learning activity, learning method, and assessment type. After the blueprint finished then the researcher developed the rubrics by following the syntax of each learning method. Each learning method has different identical feature. Discovery Based Learning focus on discovering something by stating and testing hypothesis. Problem Based Learning focuses on the solving the problem. Project Based Learning refers to the students' ability to make the project. The last one is Task Based Learning which focuses on the language used. Based on the evaluation results by expert judges, the rubric has "excellent" quality.

However, the challenges made it clear that rubrics in assessing students' learning were indispensable, since the advantages of the rubrics can help teachers to apply authentic assessment in a fun way, easier way, and more meaningful learning process. From students' side, it would also make students understand the expectation of each topic so they can prepare themselves better in the learning process.

Even though this research was conducted in two schools in Buleleng Regency, the rubrics prototype can be used outside Buleleng Regency since the learning activities were followed the syntax. Therefore, it was flexible enough to be applied in many topics.

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