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Designing Assignment Using Authentic Assessment

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Abstract. This research is conducted to get an overview of the use of authentic assessment in the department of chemistry education, Islamic University of Indonesia. This research was conducted on the students of semester five, odd semester of academic year 2016/2017. Authentic assessment is an assessment process that is capable of measuring the knowledge, attitudes and skills of learners. Chemistry teacher candidates are required to be equipped with teaching and judging skills. Teachers were required can design and carry out assessment of the process and learning outcomes of students in an objective, accountable, and informative. Teacher creativity is required in the assessment. Therefore, authentic assessment is very appropriate used to improve the competence of students in education department as teachers candidates in the preparation of learning assessments.

INTRODUCTION

The paradigm of education in Indonesia in this era of globalization is increasingly facing some of the more real educational conditions. Education in Indonesia often undergoes curriculum changes, as well as a judgment that follows with the change of power. Such conditions make education in Indonesia still needs improvement and more attention from stakeholders.

The belief that teachers only as facilitators and students as educational objects are still a strong belief in education. The existence of this belief should be able to make educators more trying to realize his condition optimally. However, in reality the students are still the object of education where in the process still depends on the educator. After the learning process becomes a formality only. The desire to actively follow the learning process must be continually instilled because it is basically the student himself who needs that knowledge.

Efforts to improve the quality of education in Indonesia are characterized by improvements in education aspects. One aspect of improved education is curriculum change. The existence of these curriculum changes also influences the changes in the assessment used. According to Permendikbud No.53, 2015, assessment of learning outcomes by educators is the process of collecting information or data about the achievement of learners in the aspects of attitudes, knowledge, and skills are done in a planned and systematic to monitor the learning process, emissions, and learning outcomes through the assignment and evaluation learning outcomes. Assessment of teachers in the classroom related to teaching and learning activities is the process of collecting facts and student learning documents to make improvements to the learning program. Assessment can also provide feedback to educators to complete the planning and learning process. The assessment standard aims to ensure the assessment of learners in accordance with the competencies to be achieved and based on the principles of assessment, professional, open, educative, effective, efficient and appropriate in the sociocultural context, and reporting the results of the learner's assessment Objectively, accountable and informative.

The facts in education show that up to now, learning and assessment of learning outcomes are still focused on the knowledge aspect only. Students only memorize the various numbers, names, dates, formulas and events that occur.

Various reasons come with a learning approach through traditional learning are still a favorite for most teachers. Many can be done to change learning process that from innovative application of learning models and assessment systems used.

In learning, educators must be able to understand the goals to be achieved as well as competencies that will be obtained by students in the learning that has been taken. Teaching and learning process is not enough done only with the activities of discussion, presentation, or conventional learning in general. Submission of learning materials should be done in accordance with the goals and results to be achieved. The assessment used can not be done only through a written test just like in general, or through the observation sheet to observe the process of teaching and learning activities. The assessment is not less important than the two assessment is able to through the assessment of performance directly or indirectly.

Authentic assessment is an assessment of students who demonstrate competence, or a combination of knowledge, skills, or a combination of knowledge, skills and attitudes through essential tasks in real working situations [8]. Authentic assessment is one alternative assessment that is able to assess learners objectively and comprehensively [9]. Authentic assessment is basically an assessment of the performance shown as a result of a comprehensive learning process [10]. Authentic assessment is highly recommended because its assessment can cover three aspects of knowledge, attitude and skills. The strength of the authentic assessment lies in the conclusions about student competencies shown through performance. Authentic assessment can provide more valid data about the competence of learners and have a positive impact on the learning process of learners [4,10].

The principle of authentic assessment is to measure the competence of learners in various ways and sources. Sources of assessment can be processes and products. Authentic assessment techniques can include assessment of portfolio, performance, essay, project, and self-assessment [7]. In this research, educators use portfolio assessment which is one of assessment of authentic assessment.

Portfolio assessment is a collection or file that can provide information for an objective assessment of performance. The files contain various student works, documents, images that can be used to show what a person is doing in a work environment³.

RESEARCH METHODS

1. Research design

The research is descriptive research. Descriptive research is a study intended to investigate the circumstances, conditions, situations, events, activities, and others [1].

2. Research subject

The sample of this research is fifth semester student, academic year 2016/2017, chemistry education department as many as nine people.

RESULT AND DISCUSSION

In a learning assessment should be able to cover three aspects of the assessment of aspects, there are of knowledge, attitudes and skills. Assessment should not be taken separately if it can be taken through a single assessment. There are many contributions to the assessment such as methods, strategies, approaches used in the learning and assessment methods used such as self, peer or authentic assessment.

Portfolio assessment is one of the authentic assessments used in this study. Selection of this assessment is expected to provide a picture with the assessment of the portfolio, students are able to improve student competence as one effort to improve the quality of education, especially as a teachers candidates. Authentic assessment not only measures what the learners know, but rather emphasizes what the learners do[5,6].

The design of portfolio work done by the students adjusted to the topic discussed. Portfolio 1 is the task of making knowledge instruments, so that the design that is made also requires adequate pedagogical competencies such as mastering the knowledge materials, the level of difficulty of the problem, the level of problem (from understanding to analysis), basic competence and competence standards to be achieved. An example of the lattice design of the knowledge instrument in portfolio 1 can be seen in Fig 1.

LATTICE OF KNOWLEDGE INSTRUMENT					
School name		: Dirgantara Senior High School			
Subjects		: Chemistry			
Curriculum		: Curriculum of 2013			
Time allocation		: 90 minutes			
Number of questions		: 25			
No	Indicator of competency	Indicator of questions	Level of questions	Item of questions	Answer question
1	Describe the peculiarities of carbon atoms	Mention the type of bond between carbon atoms and other atoms	C1	Carbon atoms can form bonds with various non-metallic elements. The type of bond that forms between C atoms with Cl is ... a. Ionic bonds b. Coordinate covalent bonding c. Hydrogen bond d. Metal bonds	B

FIGURE 1. Example: The Lattice Design of Knowledge Instrument (Portfolio 1) On Hydrocarbon Material

In portfolio 1 assignments, students are given the opportunity to design a lattice of knowledge instrumentation or knowledge on written test (multiple choice). Students learn to determine and develop based on the basic competencies that have been obtained from the syllabus. The development of the instrument is done by making the first question indicator. After getting a new indicator can be developed by making a problem and consider the level of problems ranging from C1 to C6. So in the making of one problem alone requires the ability to understand the right knowledge instrument creation and correct. If this instrument is later used in data collection in a research, it is expected to be able to measure the competence of the research subject.

In portfolio 2 assignments, students are given the opportunity to design an attitude assessment in senior high school. An example of a grating instrument attitude design using an observation sheet on a student portfolio can be seen in Fig 2.

ATTITUDE OBSERVATION SHEET							
Hint:							
This sheet is filled by the teacher / observer to assess the moral and social attitudes of the learners, tick (v) in the score column according to the honest dikap according to the learner with the criteria:							
4 =							
3 =							
2 =							
1 =							
Observation date		:					
Subject matter		:					
No	Attitude aspect	Statement	Score				Notes
1	Religious		1	2	3	4	
2	Responsibility						
3	Honest						
4	Discipline						

FIGURE 2. Example: The Lattice Design of attitude Instrument (Portfolio 2)

The portfolio for attitude-making design can not only be made in the form of observation sheets. Students may design assessment instruments such as: sheets for interviews, event records etc.

In Portfolio 3, students are given the opportunity to create skill instruments. Students are given the opportunity to develop as wide as possible in accordance with predetermined indicators. The skills of learners can be measured through various assessments such as using observation sheets, project appraisals, performance appraisals, or portfolios. Skills assessment does not necessarily only assess students' abilities in the laboratory, but skills can be in many ways such as the student is able to create a renewable product with the ideas he has. It can also be assessed as a skill assessment by means of an assessment used by one of the assessments of the authentic assessment of project appraisal. The description of student portfolio task in making skill instrument can be seen in sample student skill instrument in the form of observation sheet in Fig 3.

SKILLS OBSERVATION SHEET						
Hint:						
This sheet is filled by teacher / observer to assess student skills, marking (v) on column values according to observations and scoring guidelines.						
Observation date :						
Subject matter :						
No	Skills aspect	Indicator	Score			
			1	2	3	4
1	Conducting titration					
2						
Scoring Guidelines						
1		2		3		4
If 1 indicators are implemented		If 2 indicators are implemented		If 3 indicators are implemented		If 4 indicators are implemented

FIGURE 3. Example: The Lattice Design of Skill Instrument (Portfolio 3)

The ability to design portfolio tasks, namely the creation of knowledge instruments, attitudes and skills, is a must-have capability for students of chemistry education courses. Through authentic assessment (portfolio), learning becomes focused on the learner because the process is done by the learners themselves [2]. As chemistry teacher candidates, chemistry education students must have the ability to perform judgments. Student learning instruments are tailored to the subject that they will use in a study. If a chemistry student would later become a chemistry teacher at a high school, then the instrument used would be adapted to the curriculum used in the school. As an example of attitude assessment, the steps in the planning of attitude assessment is one of them by designing the learning activities that can generate the prescribed attitude and after determining the planning steps, the teacher prepares the observation format that will be used in the form of an observation sheet or journal [5,6]. The indicator that has been formulated is used as teacher's reference in making observation sheet or journal. So all the learning instruments used in a study must have the direction and purpose to be achieved. The assessment formats should be designed appropriately so as to facilitate the assessment and observation.

CONCLUSION

Authentic assessment is a very appropriate assessment used to improve student competence. Students of Chemistry education department are chemistry teachers candidates who must be able to design and implement the learning well. For that, the implementation of authentic assessment on student tasks is very useful to improve the competence, mindset and creativity of students.

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