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Improving Learning Outcomes in Chemistry through Authentic Assessments of Students

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Abstract

The goal of the research was to know how to enhance the learning outcome of Chemistry through an authentic evaluation. The topic of the study included 22 students. Data collection was rendered using an authentic assessment aspect involving the assignment of students, the student journal, the review and student actions during the learning process. The results of the analysis have shown that authentic evaluation and treatment could enhance the results of the study of chemistry.

Keywords: *learning; authentic; students; chemistry*

Introduction

The curriculum is a set of plans and arrangements regarding the objectives, content and learning materials as well as methods used as guidelines for implementing learning activities to achieve educational goals. Curriculum piloting aims to improve the quality of the learning process and learning designs in schools. Therefore, it is hoped that a good curriculum will have implications for the progress of the nation and state.

In teaching and learning activities, the teaching, learning, assessment and evaluation process takes place. To get the output from the quality teaching and learning process, the four processes must be implemented and managed well and meaningful (manageable and meaningful). Chemistry learning will be successful if there is a situation structuring to help students experience changes in behavior. The changes in students that are brought about from the teaching process are an indication of the implementation of the learning process properly.

Talking about the evaluation or learning outcome assessment system, up to now written tests in the form of objective tests or essay tests still dominate the implementation of evaluation of student learning outcomes in all educational institutions including high schools (SMA). An evaluation tool in the form of a written test is indeed the best choice that teachers can rely on. On the grounds that it is more practical to use, both in the preparation of the evaluation tool, the way of implementing it and the correction. However, from many reviews, this conventional evaluation tool is considered to have many weaknesses, one of which is that it only measures a small part of students' abilities. For example, a student feels sometimes less satisfied with the assessment made by their teacher because the assignments and exam results are not satisfied when returned by the teacher after being examined. Even if there are some assignments that have been returned by the teacher, they usually cannot be used as a reflection for further learning development. The result is that students become lazy and less motivated to learn, and even have a bad response to their teachers.

The incomplete application of evaluation techniques to measure the progress achieved by students during the Chemistry learning process will cause the low quality of learning outcomes in Chemistry. In connection with

this, the task of a teacher in evaluating students, of course, is not just giving a written test and then stopping there, but should be able to assess student performance thoroughly and comprehensively. Therefore, teachers must use tools to collect information about student performance and conduct continuous assessments of the progress that students achieve. For that purpose, one good tool to use is authentic assessment.

Based on initial conversations with fellow chemistry teachers at SMA Negeri 1 Baraka, Enrekang Regency, information was obtained that this evaluation system problem is one of the most important things to be resolved immediately. The authentic assessment system is a scoring system that is offered and is expected to be a solution to the assessment system used in SMA Negeri 1 Baraka, Enrekang Regency through classroom action research.

The problem investigated in this action research is how to improve the learning outcomes of Chemistry class X-1 students of SMA Negeri 1 Baraka through authentic assessment? The objectives to be achieved in this study were to determine the improvement in learning outcomes of Chemistry class XII-1 students of SMA Negeri 1 Baraka through authentic assessment.

Method

Research procedure

a. Planning stage

At this stage the researchers carried out initial discussions with the principal and chemistry subject teachers of SMA Negeri 1 Baraka, Enrekang Regency to discuss the problems to be solved in this study.

b. Implementation stage

Cycle I.

1) Preparation (a) reviewing Chemistry subject matter for class XII-1 students of SMA Negeri 1 Baraka, Enrekang Regency, which includes preparation of lesson plans, allocating time by adjusting the time available in the curriculum with the time of research, (b) determine and prepare the types of assessments to be carried out in accordance with the material to be taught, namely molecular shapes. The types of assessments that will be carried out are in accordance with the results of discussions between fellow Chemistry subject teachers, namely assignments carried out by students in class and at home, journals, process skills, daily tests, and preparing student behavior and creativity observation sheets (c) compiling learning tools based on the format applicable in SMA Negeri 1 Baraka, Enrekang Regency.
2) 2) The implementation of actions (a) informing students about authentic assessment, (b) carrying out the learning process and observers making observations using observation sheets to see student behavior and activeness during the learning process, (c) developing student activities in learning in accordance with observation sheet of student activeness, (d) giving assignments to students in the form of student activity sheets (LKS), quizzes, journals, and collecting data on student process skills when students do lab work and making practicum reports using observation sheets, (e) All student learning tasks such as quizzes, homework, science process skills and self-evaluation during the first cycle are returned to students after being checked and given a grade then archived in the form of a portfolio, (f) to determine the extent of the learning outcomes achieved by students in cycle I , then at the end of the cycle students are given a test result of learning or tests.

Result and Conclusion

One of the components in learning with the contextual Teaching and Learning (CTL) approach is the authentic assessment. This CTL is an approach that is in line with the competency-based curriculum and the Education Unit Curriculum (KTSP) which has been applied at the primary and secondary education levels since 2007. The application of

competency-based learning requires teachers who understand and are able to present a learning environment that can build and broadens previous student experiences and is responsive to a variety of student learning types.

Gagne (in Abdul Haling, 2004: 9) defines learning as a teacher's effort aimed at encouraging students to learn. Learning is a set of events that affect the student learning process. The events that affect the occurrence of student learning are not always outside the student but also inside the student.

According to Sumarno, et al (Fajar, 2002: 89) assessment (assessment of learning outcomes) is a "systemic process to determine the achievement of student learning outcomes" whereas according to Blaustein (in Ibrahim, 2002: 5), assessment is the process of gathering information in making decisions based on that information. Assessment usually refers to all the information the teacher has obtained to make decisions about students and their class. Information about students can be obtained by means of information such as observation and verbal changes. Use in the teaching and learning process, assessment means measuring tools to evaluate the results that have been achieved from the process.

Thus assessment can be interpreted as a process of collecting data and information carried out systematically, to reveal the progress of individual students to determine the achievement of learning outcomes in order to achieve the curriculum. In relation to authentic assessment, Paidi (2000: 15) states that in addition to emphasizing authentic assessment actions, it also requires direct and continuous assessment. With this direct assessment, it is hoped that students can appreciate the creativity, initiative, opinions, and arguments that arise all the time.

Descriptive Analysis of Students' Chemistry Learning Outcomes in cycle I

The average score of student learning outcomes in the first cycle with the subject matter of molecular forms was 70.3 from the achieved score of 100 with the highest score achieved was 86.5 while the lowest score was 53.80. After categorization, it was seen that of the 32 students who were the research subjects, there were no students who were in the very low category, only 1 person (3.1%) was in the low category, 4 people (12.5%) were in the medium category. , 22 people (68.8%) were in the high category, and 5 people (15'6%) were in the very high category.

Descriptive Analysis of students' Chemistry learning outcomes in cycle II

The average score of student learning outcomes in cycle II with the subject matter of molecular forms was 76.2 from the ideal score that might be achieved, namely 100, with the highest score of 93.3 while the lowest score was 57.5. Of the 32 students from each component of authentic assessment in cycle II, it shows that there are no students who are in the very low category, 2 people (6.2%) are in the medium category, 22 people (68.8%) are in the very low category. high, 8 people (25%) who are in the very high category. The results of the descriptive analysis indicate that after giving the action for two cycles, the average score of student learning outcomes has increased. This means that the learning outcomes of class X-1 students of SMA Negeri 1 Baraka, Enrekang district can be improved through authentic assessments

Nurhadi (2003: 53) suggests things that can be used as a basis for assessing student achievement on authentic assessments, including: (1) projects / activities and reports, (2) homework, (3) quizzes, (4) field trips, (5) student presentations or performances, (6) demonstrations, (7) reports, (8) journals, (9) written test results, and (10) student papers. The Ministry of National Education (Kemendiknas) states that the assessment tool in the assessment authentic in the form of collection of student work (portfolios), work (products), assignments (projects), performance (performance), and written tests.

A portfolio is defined as a collection of student work with a specific and integrated purpose that is selected according to certain guidelines, according to Gronlund (Megawati, 2005: 6).

The portfolio includes a variety of examples of student work depending on the breadth of

objectives. What should be written depends on the subject and purpose of using the portfolio. Examples of student work provide a basis for consideration of learning progress and can be communicated to students, parents, and interested parties.

Conclusion

In conclusion, The changes that occur from cycle I to cycle II are qualitative data that are recorded and obtained from the observation sheet at each meeting recorded by the observer in each cycle. The frequency of student attendance increased from cycle I to cycle II (the average attendance was 74% in cycle I and 79% in cycle II. This shows the seriousness of students to take Chemistry lessons even though the number of students who attended was not always entirely (20 to 22). students) of 22 students. Student attention when the teacher discusses the subject matter has increased from cycle I to cycle II. This is indicated by the increasing number of people involved and actively responding to teacher questions and answers from students in the teaching-learning process. Those who asked to explain the material that was poorly understood had an increase marked by the increase in students who still needed guidance in solving the practice questions (4 students in cycle I and 18 students in cycle II). The courage and enthusiasm of students in answering questions about Chemistry subject matter also experienced an increase, seen from a number of students who proposed n yourself or raising your hand over and over to give the answer. The activeness of students in helping their friends work on the practice questions also increased, as seen from a number of students who volunteered to help their friends solve the questions on the blackboard.

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