

**INTEGRATING LOCAL WISDOM- BASED SCIENTIFIC APPROACH ON
CHEMISTRY LEARNING AT FIRST GRADE OF SMAN 1 PURWOREJO TO
IMPROVE LEARNING DISCIPLINE**

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Indonesian government supported the integration of local wisdom into education. It was proven by the existence of the Act No. 20/2003 on National Education System and the Regulation of the minister of Education and Culture No. 81A/2013. Local wisdoms of Purworejo could be matched into chemistry learning. This research was to measure the difference of learning discipline at SMAN 1 Purworejo between students who learnt chemistry by integrating local wisdom-based scientific approach and those who were without the integration of local wisdom. There were a control class and treatment class in this study. Before getting the treatments, the students fulfilled the questionnaire as the prior learning discipline. The treatments experienced by the students were chemistry experiment, presentation, essay writing, and the discussion in traditional organization on chemistry learning. After joining the treatments, the students fulfilled the final questionnaire. Data were analyzed by using Independent Sample t-Test of SPSS from which learning discipline of students at the treatment class was significantly different from those who were at the control class (Sig.p < 0.000). This research inferred that learning discipline of students who studied by the use of local wisdom -based scientific approach was significantly different from that were without the integration of local wisdom.

Keywords: local wisdom integration, scientific approach, chemistry learning, learning discipline

INTRODUCTION

Indonesian educational system supported the educational development based on the potencies of a region such declared on the Act of the Republic of Indonesia Number 20 Year 2003 on National Education System [1] and the regulation stated by Minister of Education and Culture Number 81 A (2013), which stated that regional potency was purposed to improve attitude, knowledge, and skill [2]. Therefore, the researcher needed to integrate local wisdom into learning suggested by the latest curriculum (through scientific approach) to get learning discipline.

THE RESEARCH METHOD

This research was an experimental study with one factor research design and two samples. One factor was the effect of local wisdom-based scientific approach. Two samples of the research consisted of one group as the experimental class and the other group was as the control class. This research was done on January until February 2015 at State Senior High School 1 Purworejo. The samples of this research were the first grade students of State Senior High School 1 Purworejo 2014/ 2015 who were in second semester. They were 64 students in two classes. X MIA 2 was as the treatment class and X MIA 3 was as the control class.

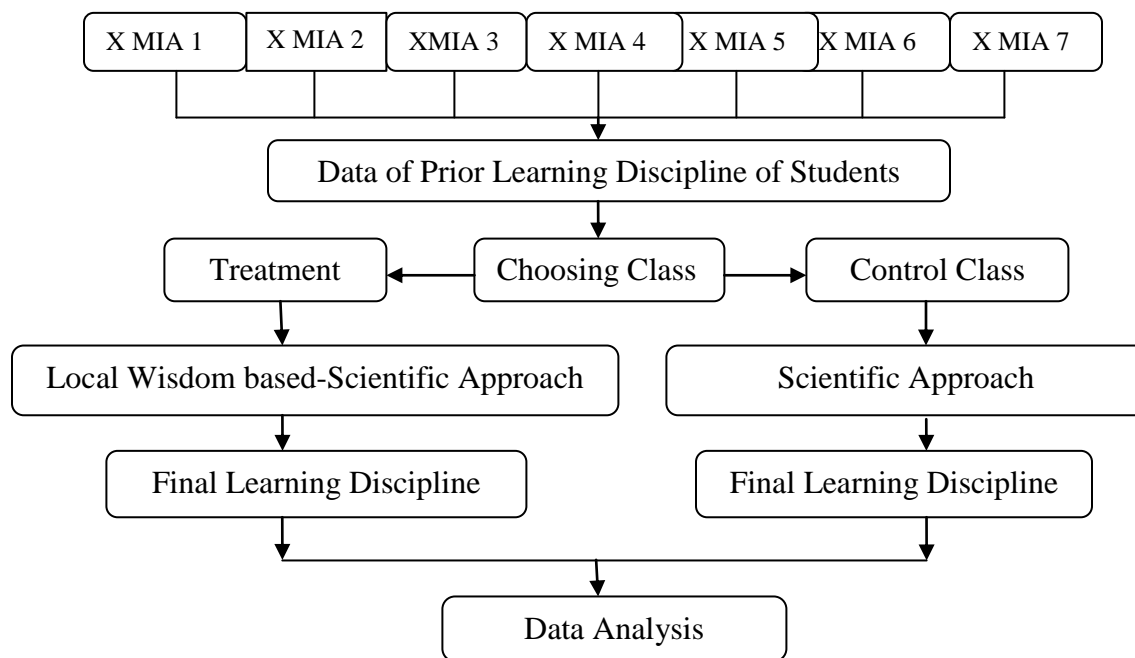


Figure 1. the Diagram of Research Design

The research measured the difference of learning discipline at SMAN 1 Purworejo between students who learnt chemistry by integrating local wisdom-based scientific approach and that without integrating local wisdom. This research used independent sample t- test of SPSS to measure the difference of students' learning because of the integration of local wisdom in chemistry learning. There were 14 valid statements of 29 statements from the validation process to 31 students. The reliability of the test was also analyzed using SPSS 16.00. The data were analyzed after homogeneity and normality of the data were tested.

RESULTS AND DISCUSSIONS

Indonesian latest curriculum suggested the use of scientific approach that had five steps: observing, asking, trying, associating, and communicating [3]. The latest curriculum also supported the existence of local wisdom in Chemistry Learning. Local wisdom is various aspects of cultural potency such as medicine, art, life style, farming, economy, government, and all systems that can manage the people's life [4]. Local wisdom can be a thing, thinking, or aspect that is as heritage. Local wisdom is so interesting to use in learning that it

supports the students to have more appreciation and attraction to study. Good students' achievement is because of good intelligence, consistence and rigid school's rule, self- discipline in learning, and good behavior [5]. It showed to us that this is so important to study about learning discipline.

It is necessary to blend the concepts, skill, and thematic unit in chemistry learning. [7] states that there are ten models to plan integrated learning. Not all of integrated learning models can be compatible to chemistry learning. According to National Ministry of Education, there are three models that are compatible for Natural Science, they are integrated learning model, webbed learning model, and connected learning model.

There were four meetings as the treatments in local wisdom- based scientific approach. On the first day, the students did the chemistry experiment of electrical conductivity in chemical substances. The treatment class used also local wisdom materials. On the second meeting, the students were asked to do exercise about ionization degree and ionization reaction. The teacher facilitated the pupils to conclude the data to make the formula of ionization degree. Then, the students

discussed the development of oxidation and reduction reaction. After that, the students made the article of the use of local wisdom in developing Purworejo from chemistry point of view. On the third meeting, the method used was the discussion in a group. The teacher freed the students to discuss the material about reaction first. On the last meeting, the students were facilitated to know the ways in naming the chemical compounds, especially Stock Rule. The teacher explained the ways in naming compounds first. Then, the students practiced. The teacher also made the quiz. Then, the students did presentation of Purworejo's local wisdom related to chemical reaction. The goal was that the

students would be fun in learning chemistry by integrating local wisdom that made them more discipline in learning.

Learning discipline of students was measured by using the questionnaire of learning discipline before and after the treatments.

The difference of learning discipline in the control and treatment classes was measured by independent sample t- test. In this research, (p) 0.000 that was less than (α) 0.05 was found. It meant that there was the difference of learning discipline between the students that apply local wisdom-based scientific approach and those who did not apply it.

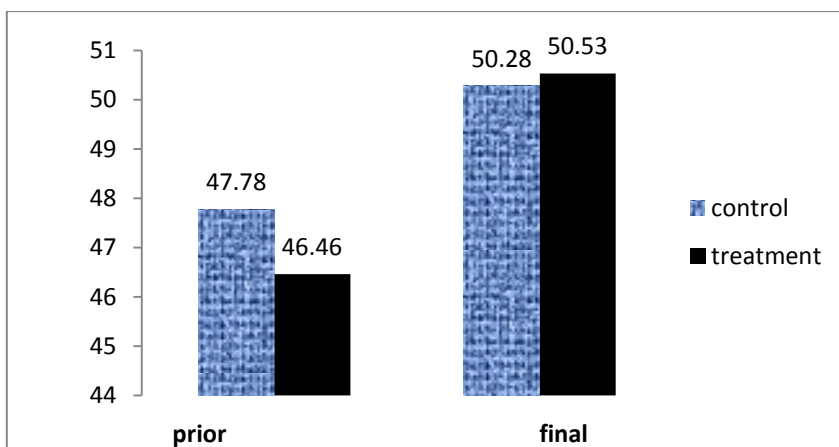


Figure 1. The Comparison of Learning Discipline in Control and Treatment Class.

[5] stated that there were four factors that affected discipline, namely: self awareness, loyalty, education, and media. Discipline has an important role in character building. Discipline is important because of these reasons:

a. Self discipline will support the students in their study. In the other hand, the students that like to break the rules at school will impede potency and achievement.

b. School condition and class will not be comfortable for learning activity if there is not good disciplinary. Discipline will support silence and class control.

c. The parents look forward that the children are able to apply norms, moral values, and discipline.

d. Discipline is a way for the students to study and work successfully. [5]

Discipline term is also explained in Goods's Dictionary of Education [6] as below:

1. A direction to get achievement or effectiveness.
2. An attitude that is selective, energetic, active, and self- directed, although there are many problems.
3. An attitude controlling ourselves directly and authoritatively through gift and law.

Based on those statements, the most important aspect of discipline is a strength and obedience to the rules. There is a self-awareness to do the rules to get the goals/ achievement.

While [8] states that discipline has the characteristics:

1. Doing the rules well, because rule is the main point of obedience.

2. Obeying the wisdoms

[9] states that discipline is on time, responsible, and distinct. The discipline person will manage the time for doing everything, making the schedule, and selecting the activity based on priority.

Learning discipline is an attitude that shows obedience to learn according to the schedules and does something in a right way.

CONCLUSION

There was significant difference of learning discipline between the students that applied and those who did not apply local wisdom-based scientific approach in chemistry learning at grade ten of State Senior High School 1 Purworejo.

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