Biology Factual Knowledge at Eleventh Grade of Senior High School Students in Pacitan based on Favorite Schools

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This study aimed to determine the Biology factual knowledge at eleventh grade of senior high school students in Pacitan based on favorite schools. This research was a descriptive research by using survey method. The population in this study was all of senior high school students in Pacitan. The sampling technique used purposive sampling technique and obtained 3 favorite schools and 3 non-favorite schools. The technique of collecting data used test form which was as the instrument of the research. Data analysis technique used Mann-Whitney U test. Based on the test, it was obtained p = 0,000 (p <0,05) so there was a significant difference between the factual knowledge of the students in the favorite schools and non-favorite schools in Pacitan. The factual knowledge of students in favorite schools was higher with an average of 5.32 while non-favorite schools were obtained an average of 4.36.

Keywords: Factual Knowledge, Biology, Senior High School Students

1. Introduction

One aspect of competence that has been emphasized in the curriculum compilation in Indonesia both Kurikulum Tingkat Satuan Pendidikan (KTSP) and Curriculum 2013 is the development of students’ thinking ability. Permendikbud No.23 of 2006 on Graduate Competency Standards at SMA / MA / SMALB education level states that through the learning process students are expected to build and apply information and knowledge in a logical, critical, creative, and innovative and demonstrate the ability to think logical, critical, creative, and innovative in making the decision.

Graduate Competency Standards Curriculum 2013 or Standar Lulusan Kurikulum 2013 Permendikbud Number 54 of 2013 states every graduate elementary and secondary education units have competencies in three dimensions of attitude, knowledge, and skills. In the aspect of knowledge or cognitive domain students are expected to have factual, conceptual, procedural, and metacognitive knowledge in science, technology, art, and culture with the insights of humanity, nationality, state and civilization on the causes and effects of phenomena and events.

In line with the regulation in 2016 through Permendikbud No.20 Year 2016 about Competency Standards Graduates of Primary and Secondary Education firmly state that the need for high school students to be trained in cognitive processes that cover the six process categories (C1-C6) from recalling, understanding, applying, analyzing, and evaluating to achieve the mastery of factual, conceptual, procedural, and metacognitive knowledge.
This is in accordance with the cognitive theory of Benjamin Samuel Bloom which in its development, Bloom's taxonomy was revised by Anderson and Krathwohl. Bloom’s Taxonomy has classified learning outcomes in three domains: cognitive, affective, and psychomotor. In the cognitive domain includes six categories C1-C6 that is remembering, understanding, applying, analyzing, evaluating, and creating. While the dimensions of cognitive products consist of four categories such as factual knowledge, conceptual knowledge, procedural knowledge and knowledge of metacognition.

The level of favorite school is likely to affect students’ achievement in which the school favorability level is one of the indicators related to students’ achievement in the school. This is in accordance with the statement of Mutiara (2005) that indicators of school favorites from the community, among others (1) public interest to enter the school is high (2) achievements obtained by many schools (3) have adequate infrastructure (4) good and high graduate scores (5) the number of learners received at favorite schools or colleges. Indicators from Dinas Pendidikan are more or less the same as the community's assumptions, among others (1) the school has the infrastructure that has fulfilled Badan Standar Nasional Pendidikan (BSNP) (2) have many achievements both academic and non-academic (3) produce good and excellent graduates 4) the number of students received at a favorite college.

Until now there is no comprehensive information on the implementation of learning that accommodates these cognitive processes and products in the schools in Pacitan regency. One of them is how factual knowledge of students is viewed from the favorite schools, especially through Biology subjects. This factual knowledge is a fundamental knowledge that students must have when it comes to learn or solve the problems within a discipline. Given this knowledge is the basic capital of learners, so it is important to know the level of its achievement.

Therefore, it is needed the research under the title "Biology Factual Knowledge at Eleventh Grade of Senior High School Students in Pacitan based on Favoritism School". This study is expected to provide information about the achievement of factual knowledge of learners in Pacitan regency so that the teachers can design a more effective and efficient learning based on the results of the analysis that has been done.

2. Materials and Methods
2.1 Materials
2.1.1 Factual Knowledge
Factual knowledge is the knowledge in the form of pieces of information or basic elements that exist in a particular discipline. Factual knowledge is generally a low-level abstraction. There are two kinds of factual knowledge, knowledge of terminology and knowledge of specific details and elements (Widodo, 2006).

Knowledge of terminology: includes knowledge about certain labels or symbols both verbal and non-verbal. Each discipline usually has specific terminology for the discipline. Some examples of knowledge about terminology are knowledge of the alphabet, knowledge of scientific terms, and knowledge of symbols in maps.

Knowledge of specific details and elements: includes knowledge of events, persons, times and other information of a very specific nature. Some examples of knowledge about details and elements, such as knowledge of names, place and times of events, knowledge of a country's products, and knowledge of information resources. Due to the immense amount of facts, educators need to select and sort out which facts are very important and which facts are less important (Anderson, et.al, 2001).

2.1.2 Favoritism School
School favorability in this case refers to superior and effective schools. Indicators of favorite schools from the community, among others, the public interest to enter the school is high, the achievements obtained by many schools, have adequate infrastructure, good graduates and high graduate scores, and the number of students received at favorite schools or colleges (Pearl, 2005).
In line with these indicators, Alzahrani (2016) stated that good schools can be identified based on alignment of organizational structure to school mission and goals, integration and effectiveness of management processes (resource allocation, budgeting, planning, performance evaluation, etc.), effective and valuable school facilities and utilities, effective and valuable human resource processes, knowledge sharing, inclusive working and learning environment, employee development and empowerment, and performance review and evaluation.

2.2 Methods

2.2.1 Research Design

This research was descriptive research using survey method. This research was conducted in Pacitan regency of East Java province. The data collection was conducted on May 4th to May 13th, 2017, the even semester of the academic year 2016/2017, in accordance with the academic calendar of the school, related to the subject matter used in the study. The sample in this research is the eleventh grade students in Pacitan regency taken from 3 favorite schools and 3 non-favorite schools with the total students are 309 students.

2.2.2 Research Instrument

The data were collected through the test technique. The test technique is performed to measure the achievement of factual knowledge. The test instrument used was a question instrument developed by Paidi, et.al (2016) which consists of immune system material, reproductive system, coordination system, and excretion system.

2.2.3 Data Analysis

The collected and validated data are analyzed descriptively and inferentially. Descriptive analysis to find the maximum score, minimum score, average student score, standard deviation, range and variant. Inferential analysis was conducted to know the difference of achievement of factual knowledge of students in school with variable that accommodated, that is the favorability school. The significance of factual achievement figures is associated with the criteria presented in table 1 below.

| Table 1. Range Achievement Factual Knowledge in Biology Subject |
|---------------------------------------------------------------|
| **Range of Mean** | **Achievement Category of Factual Knowledge** |
| \((7.5) \leq M \leq (10)\) | Very High |
| \((5) \leq M \leq (7.5)\) | High |
| \((2.5) \leq M \leq (5)\) | Low |
| \((0) \leq M \leq (2.5)\) | Very Low |

3. Result and Discussion

3.1 Result

The achievement of students' factual abilities, shown from the average, standard deviation, minimum value, and maximum calculated from all sample members, are presented in table 2 below.

| Table 2. Mean and Standard Deviation Factual Knowledge |
|-------------------------------------------------------|
| **Statistics** | **Score** | **Category** |
| Mean | 5.07 | High |
| STDEV | 0.05 | - |
| Minimum Score | 1.06 | - |
| Maximum Score | 7.46 | - |
The table shows that the factual knowledge of the students at the eleventh grade of IPA in Pacitan regency is 5.07 which belong to the high category. From a very wide range of minimum and maximum values, it is equal to 6.4 (7.46-1.06) with a standard deviation of 0.05.

| Variable     | Statistics (Mean) | Criteria | Significance (Mann-Whitney Test) |
|--------------|-------------------|----------|----------------------------------|
| Favorite     | 5.32              | High     | Significance Different (p=0.000)  |
| Non-Favorite | 4.36              | Low      |                                   |

Associated with the schools’ favorites level in table 3, it is seen that there is a significant difference in the factual knowledge of students between favorite and non-favorite schools with p = 0,000 (p <0.05). Schools that include favorites get an average of 5.32 while non-favorite schools are 4.36.

3.2 Discussion

The factual knowledge of students in the Pacitan regency included in the high category so that students were expected to build higher knowledge because they already have a good foundation or capital. However, in relation to the accommodated variable of favorite school, it was found that there was a significant difference between schools that included favorites and non-favorites. Favorite schools tend to have higher factual knowledge while non-favorite schools are still low. According to Aischa (2010), favorite schools graduates are better than non-favorite schools.

This is reinforced by Dionisia (2016), that the thinking ability of divergent students in favorite schools is higher than non-favorite schools. In response, teachers should pay more attention for developing students' factual abilities if they want to achieve more complex abilities. One way is by choosing methods and learning models that emphasize the facts. This factual knowledge is a fundamental knowledge that students must have when it comes to learn or solve the problems within a discipline.

4. Conclusion

From the results of this study, it can be concluded that the factual ability of students in Pacitan regency including high criteria and students’ factual ability is significantly influenced by the level of school favorability.

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