ANALYSIS OF STUDENT UNDERSTANDING AND PERCEPTION OF THE ESSENCE NATURAL SCIENCE (NATURE OF SCIENCE) AS A BASIC FOR DEVELOPING LEARNING BASED CHARACTER IN BASIC SCHOOL

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Abstract. This study aims to determine the extent to which students' understanding of the nature of Natural Sciences, because it is a natural or natural concept of Nature Science is what memorized concepts. The students' understanding of the nature of Natural Sciences varies from one place to another, with this study aims to develop character-based nature teaching in elementary school according to their respective regional characteristics. The research method used is descriptive quantitative. The study was conducted in several Primary Schools in Odd Semester Year 2016/2017. The population of the study were elementary school students in West Java and East Java. The sampling technique was done by using stratified random technique that is elementary school students grades 3 to 6, at 4 elementary school in West Java province, and three elementary school in the province of East Java. From the data collection process, obtained a sample of 485 students. Data collection techniques were conducted using non-test instruments, including: questionnaires, interviews, and observations. The results show that differences in understanding and perception influenced the background of the students and the condition of school infrastructure. Thus this can be used as a basis for developing character-based nature learning by applying scientific approach.

Keywords: Nature of Science, Student Understanding, Student Perception

I.INRODUCTION

Natural Science aims to enable students learning science literacy, this can be done by trained me skills processes and attitudes to students with adjusting stage of cognitive development of students. By learning science students are expected to understand the nature and the things that happen in it, p learning Natural Science Natural Science should cover the nature of which has three components: science as the product science as a process, and science as a scientific attitude. The development of the understanding of science can train students to make decisions and take responsibility when faced with the problem of knowledge [1].

Lederman [2] states that by understanding the Natural Science can make people more aware and can make responsible decisions when dealing with a scientific decision, students will gain experience through education Sciences A lam to reason inductively with various concepts and principles of Science A lam. Ability acquired students are expected to be used to reveal the natural phenomena in everyday life, applying the principles of Natural Science with technology, to develop habits and scientific attitude to locate and enhance students' understanding of the concept.

A teacher to instill a concept of science in learning disable in, need to be taught contextually with connect yes to the surrounding environment, because it can increase critical thinking skills and understanding of the concept of the material being taught to students. This is consistent with Piaget statement that elementary

school children ages 7-12 years are in the operational phase concrete, students will be assisted if in understanding the concepts or knowledge requires a learning experience concrete [3]. The role of the teacher guides the students determine or detailing steps are necessities their needs related to activities students. Especially for children, teachers need to help create a research plan in stages [4].

In essence, Natural Science is built on the basis of scientific products, scientific processes, and scientific attitudes. In addition, Natural Science is also viewed as a process, as a product, and as a procedure. As the process is defined all scientific activities to perfect the knowledge of nature as well as to discover new knowledge. As the product is defined as the result of the process, in the form of knowledge taught in school or outside school or reading material for dissemination or dissemination of knowledge. As the procedure is intended as a methodology or means used to know something is commonly called the scientific method (scientific methods) [5]. In addition as a process and product, Daud Joeseof [6], has suggested that the Natural Science be used as a "culture" or a group or a social institution with a tradition of values, aspirations, and inspiration.

According to Patta Bundu [7], science or commonly translated Natural Science comes from the word "Natural Science". Natural has a natural meaning and is related to nature, while science means science. That is, science is seen as a science that learn about nature or who study events that occur in nature. From what is learned, it seems that the Natural Science has the object and issues a holistic or comprehensive. While In accordance with the curriculum center [8] states that the nature of the Natural Science contains four main elements in Natural Science, which from all four of these elements is the main characteristic of the whole, which includes: a. Attitudes: curiosity about natural phenomena, living things, and causal relationships that underlie problems in nature that can be solved through scientific procedures, b. Process: procedures or ways of solving problems through scientific method, c. Products: in the form of facts, principles, theories, and laws, and d. Application: the application of scientific methods and the concept of Natural Science in everyday life.

Referring from some of the above definitions it can be concluded that the nature of science is a science that is presented thoroughly to study nature and its symptoms on the basis of elements of attitudes, processes, products, and applications in which the four elements are a unity. Therefore, students are expected to have full knowledge and are able to understand natural phenomena through problem-solving activities using scientific processes / scientific method so that the learning activities is a meaningful process with the integration of the value of what is learned. Complementing this, according Sudjana [9] basically Natural Science (Natural Science) or science, namely: a way to learn about natural phenomena and its contents as they are, and confined to the human experience. In attempting to interpret these natural phenomena, human beings seek to clarify the various events, causes, and impacts that result from using the scientific method. The scientific method is what is the bridge between the theoretical explanation with empirical evidence. In addition, Natural Science is also seen as a process and product. Natural Science is said to be a process because it requires the existence of a process or specific ways that are analytical, meticulous and complete, and connect it with natural phenomena with each other to form a conclusion. Natural Science as the process includes how to acquire, develop and apply knowledge, including how to work, think, solve problems, and behave. While Natural Science is said as a product because it understands natural phenomena in the form of principles, concepts, laws, theories and facts that aim to explain the various natural phenomena that occur. Characteristics of science education as a product or content includes facts, concepts, principles, laws, and science theory.

So in essence Natural Science consists of three components, namely scientific attitudes, scientific processes, and scientific products. This means that science is an activity or an active process of using the mind in studying the natural phenomena that can not be contemplated, not only consists of a collection of knowledge or various facts to be memorized. Natural Science using what you already know to understand the other sciences unknown. A problem that has been formulated and then solved will allow the Natural Science to develop dynamically, so that the body of knowledge as the product increases. Each subject of course has a certain purpose in learning. The purpose of science learning contained in the Curriculum 2013 is to gain confidence in God Almighty because by studying science students can know the existence, beauty, and regularity of nature.

It will develop a curiosity, a positive attitude, and an awareness of the relationship interplay between science, environment, technology, and society. Then the students will develop the knowledge and science concepts that are useful and can be applied to problems in everyday life. Students will also develop the skills to observe and study of the natural surroundings, solve problems, and make decisions. Then the students' awareness will be increased to take part in preserving, maintaining, and preserving the natural environment as God's creation. Learning science as well as the provision of knowledge, concepts and basic skills to continue their education, Sudjana [10]. Science as a product because the content of science is an empirical and analytical activity undertaken by experts. Science products contain the facts, principles, laws, concepts and theories used to explain or understand nature and the phenomena that occur in it Sudjana [11]. Science as a process is usually synonymous with the skills to assess the phenomena of nature through a certain way to study the phenomena of nature through a certain way to gain knowledge as well as the further development of science. Besides the concept that can be used will last longer and can be used to solve problems in everyday life [12]. Scientific attitude is different from attitudes toward science. Scientific attitude is the attitude of scientists to seek and then develop science, while attitudes toward science is a person's inclination toward science [13].

In the 2013 curriculum used approach scientific, scientific approach stated that the essence of science as a process, namely the discovery of the truth in the scientific method [14]. To develop students' competence, the learning process of Natural Science should emphasize the provision of direct experience. So with the curriculum 2013 ng yes quality science teaching can materialized. To determine whether students in elementary already understand or not of the nature of science, we do research on the analysis of elementary students' understanding of the nature of science. To obtain the full picture and representative, we doing research on students' understanding of the nature of science in terms of a variety of students varied backgrounds, which will result from this study will be the basis for developing character-based students in scientific approach.

II. METHOD

Research methods It uses quantitative descriptive method. Research conducted at several Primary School in Odd Semester Academic Year 201 6/201 7. The study population was of elementary school students in urban and rural areas in the two provinces of West Java and East Java. The technique of taking sample is done by using with random techniques (randomized) Stratified are students of grade III, IV, V, and VI, on the 4th Primary School in West Java province, and three elementary schools in the province of East Java. From the data collection process stratified

random technique based on the obtained sample represented students some 485 people. Data was collected using non-test instruments, including: questionnaires (questionnaires) with a Likert scale (4, 3, 2, 1), interview (interview), and observations (observation).

Each of these non-testing instruments, which include: a questionnaire (questionnaire) with Likert scale (4, 3, 2, 1), the questionnaires (interview), and observations (observation) were resentful been through the process of testing the validity of the instrument. Test the validity of the instrument (questionnaire) in this study using a test construct validity with reference to expert opinion (expert judgment) and the empirical validity. Empirical validity (item) is calculated by the product moment correlation rough numbers with criteria 0.3 [15].

Measurements were made based on the scores obtained from the questionnaire on the nature of the science (NOS) by the students, the results of observation and interview. Components of the nature of science (NOS) were included in the questionnaire (questionnaire) include the following: 1) Durable and tentative; 2) Based Observations; 3) Based on Empirical Data; 4) Solving the problem with the scientific method; 5) Form of facts, principles, theories, and laws; 6) How to Know and Explaining Nature and 7) How it Works Scientists.

III. DISCUS

A. Result

From the questionnaire distributed to the respondents, then performed data processing by arranging the data table then calculated to obtain the average percentage data of each NOS Component according to the classification of respondents. Respondents were grouped by sex, class, school, and school area town and village. Distribution average percentage yield the simple Retained Earnings are presented in figure 1 as follows, so that it becomes concrete and real, the table is processed into a graph in Figure 1 as follows.

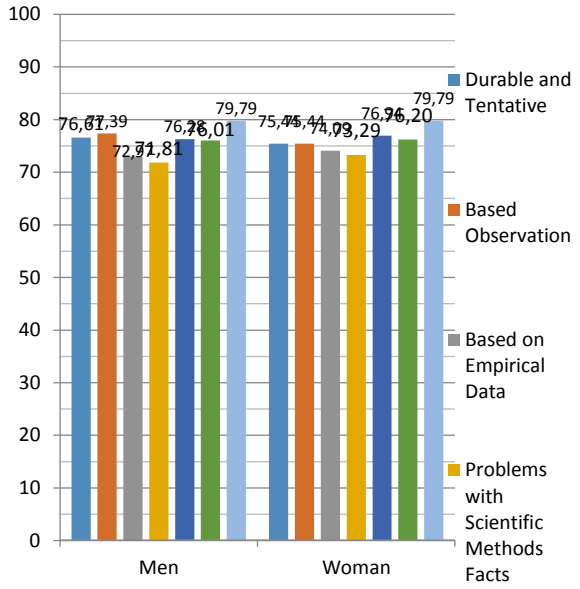

Figure 1. Comparison of Percentage of components NOS Male and Female Students

From Figure 1 it is known that the percentage of male students who answered; durable and tentative 76,67%, based on observation 77,39%, based on empirical data 72,97%, problem solving with scientific method equal to 71,81%, in fact, principle and law equal to 76,28%, how to know and explain the nature of 76.01%, how scientists work for 79.79%. While the percentage of female students who answered; durable and tentative amounted to 75.44%, based on observations of 75.44%, based on empirical data amounted to 74.09%, solving the problem with scientific methods of 73.29%, in the form of facts, principles and laws of 76.94%, how to know and explain the nature of 76.20%, how scientists work for 79.79%.

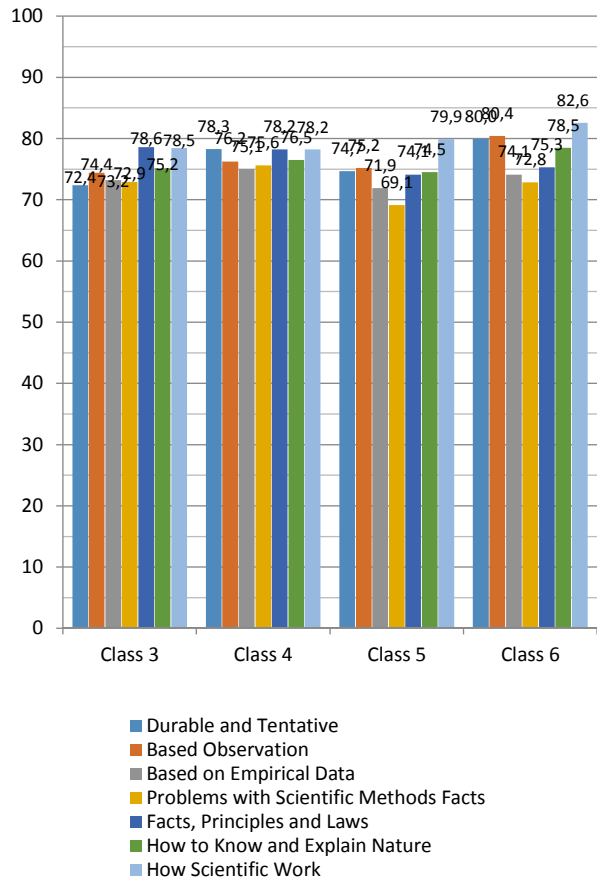

Figure 2. Comparison of Percentage of components NOS Class 3 - Class 6

From Figure 2 it is known that the percentage of the number of Grade 3 students who answered about; durable and tentative 72,4%, based on observation equal to 74,4%, based on empirical data equal to 73,2%, problem solving with scientific method equal to 72,9%, facts, principle and law equal to 78,6% how to identify and explain the nature of 75.2%, a car 78.5% of scientists' work. Percentage of number of grade 4 students who answered about; durable and tentative 78.3%, based on observations of 76.2%, based on empirical data of 75.1%, problem solving with scientific method of 75.6%, in fact, principles and laws of 78.2%, how to know and explain the nature of 76.5%, how the work of scientists of 78.2%. Percentage of number of 5th grade students who answered about; durable and tentative equal to 74,7%, based on observation 75,2%, based on empirical data equal to 71,9%, problem solving with scientific method equal to 69,1%, facts, principle and law equal to 74,1% how to know and explain the nature of 74.5%, the way scientists work by 79.9%.

Percentage of number of Grade 6 students who answered about; durable and tentative 80,0%, based on observation 80,4%, based on empirical data equal to 74,1%, problem solving with scientific method 72,8%, facts, principle and law equal to 75,3% how to identify and explain the nature of 78.5%, c fig scientists working at 82.6%

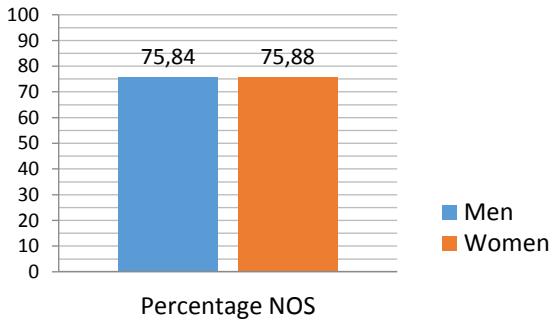

Figure 3. Comparison of Percentage NOS Among Students Male and Female

From Figure 3 it is known that the percentage of male students who understand the science lesson with 7 indicators namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists work 75.84%. While the percentage of female students as big as who understand science lesson with 7 indicator 75,88%

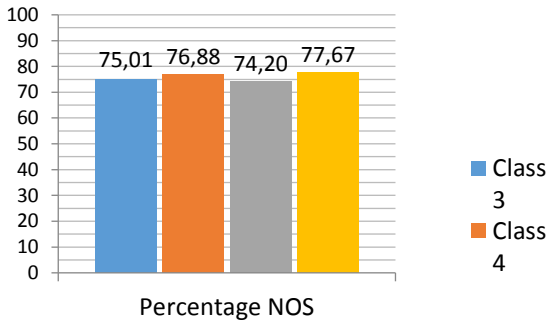

Figure 4. Comparison of Percentage NOS between Grades 3-6

From Figure 4 it is known that the percentage of the number of 3rd grade students who understand the science lesson with 7 indicators namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws as big as, how to know and explain nature, and how scientists work for 75.01%. the percentage of students in grade 4 is 76.88%, the percentage of students in grade 5 is 74.2%, and the percentage of students in grade 6 is 77.67%

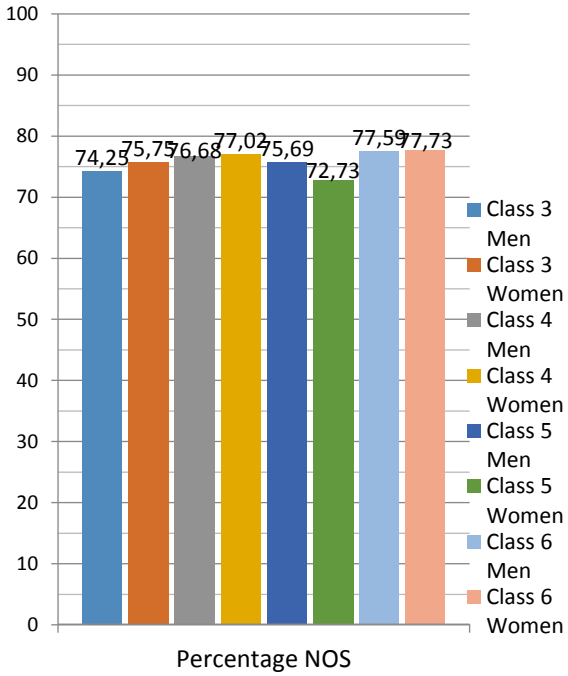

Figure 5. Comparison of Percentage NOS between Class and between Men and Women

From Figure 5 it is known that the percentage of 3rd graders who understand the science lesson with 7 indicators are; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists work 74.25%, the percentage of students 75.75%. Percentage of 4th graders who understand science lesson with 7 indicators; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws as big as, how to know and explain nature, and how scientists work 76.68%, the percentage of students 77.02%.

Percentage of the number of 5th graders who understand the science lesson with 7 indicators namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists work 75.69%, the percentage of students of grade 3 of women 72.73%. Percentage of the number of 6th grade male students who understand the science lesson with 7 indicators namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain the nature, and how the scientist work for 77.59%, the percentage of female grade 3 students 77.73%.

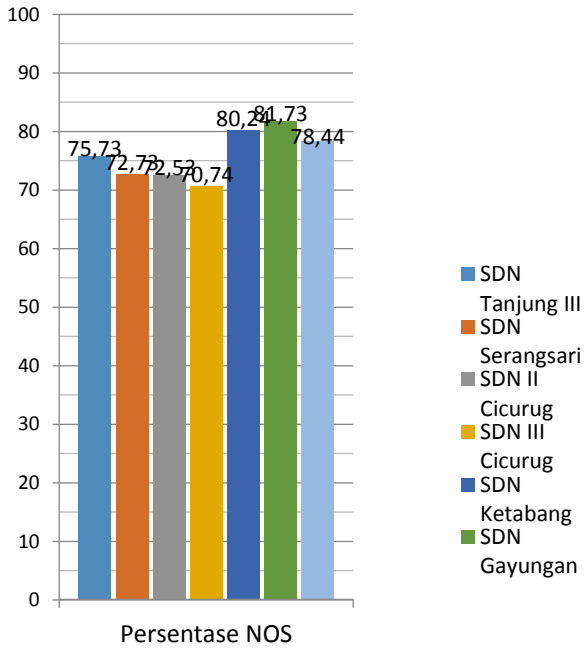

Figure 6. Comparison of Percentage NOS between the School

From Figure 6 it is known that the percentage of students in SDN Tanjung III who understand the science lesson with 7 indicators

namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws as big as, how to know and explain nature, and how the work of scientists is 75.73%, the percentage of students in SDN Serangsari is 732 , 73%, the percentage of students in SDN II Cicurug is 70,74%, the percentage of students in SDN II Ketabang is 80,24%, the percentage of students in SDN Gayungan is 81,73%, and the percentage of students in SDN Tenggilis 78.44%.

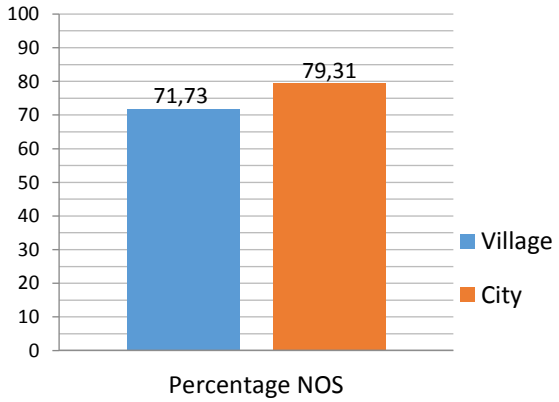

Figure 7. Comparison of Percentage of NOS between Urban and Rural Schools

From Figure 7 it is known that the percentage of students in schools in rural areas who understand the science lesson with 7 indicators namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists work 71.73% and percentage of students in schools in urban areas amounted to 79.31%.

B. DISCUS

From the questionnaire distributed to the respondents, then performed data processing by arranging the data table then calculated to obtain the average percentage data of each NOS Component according to the classification of respondents. Respondents were grouped by gender, male and female, classes, 3, 4, 5, and 6, the school, which consists of six schools and school location are towns and villages.

1. Comparison Understanding Students Natural Science Itself L battery male and female in All Schools

From the results of data analysis known that the percentage of male students who understand the science lessons with 7 indicators, namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists work 75.84%. While the percentage of female students who understand the science lessons with 7 indicator of 75.88%. This means that the results of the data show that the understanding of science learning in male students is lower than female, but the difference is not too high only 0.04%.

From these data it can be concluded that the difference in students' understanding of the nature of science in terms of sexes do not differ much. This line of research conducted by Wulandari [16] that there was no significant difference in ability between boys and girls in terms of their ability. This is in line with the opinions and research of Debacker & Nelson [17], that there is no difference in motivation and learning outcomes Natural Science in students when viewed from sex, this will have implications on the absence of a significant difference between male students and female students in understanding the nature of science.

While there are some experts and research results stating that there are states that between men and women there are differences in the ability of learning outcomes, especially in math and science. Tsado, Gipps, and O'Connor [18] states that on some subjects in school boys and girls in the achievement experience the difference, especially math and science. This is because of the different physical conditions between men and women. Sasser [19] explains that the brains of men and women there are differences in the dense nerve bundles connect the two hemispheres or Corpus callosum that

women are superior in multitasking such as seeing, hearing, and recorded simultaneously. But according to William and Jacobson [20] stated at the beginning of primary education there are no differences science learning achievements between men and women, the difference is only on the topic of material involving the calculation. This is corroborated by Reese et al [21] which states in terms of divergent thinking ability does not show significant differences associated with gender differences.

2. Comparison understanding on Itself Natural Science Judging Students of Classes in All School

Percentage of number of 5th grade students who answered about; durable and tentative equal to 74,7%, based on observation 75,2%, based on empirical data equal to 71,9%, problem solving with scientific method equal to 69,1%, facts, principle and law equal to 74,1% how to know and explain the nature of 74.5%, the way scientists work by 79.9%. Percentage of number of Grade 6 students who answered about; durable and tentative 80,0%, based on observation 80,4%, based on empirical data equal to 74,1%, problem solving with scientific method 72,8%, facts, principle and law equal to 75,3% how to identify and explain the nature of 78.5%, way scientists work at 82.6%. From Figure 4 above in mind that the percentage of grade 3 students who understand the science lessons with 7 indicators, namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws as big as, how to know and explain nature, and how the scientist work for 75.01%. percentage of 4th graders at 76.88%, the percentage of Grade 5 student at 74.2%, and the percentage of Grade 6 students amounted to 77.67%.

Based on the results obtained then we can know that the average grade 3 students who understand the science lesson of 75.01%, grade 4 average of 76.88%, grade 5 average of 74.20%. While grade 6 average of 77.67%. This means that the results of the data show that the lowest understanding of science learning is found in grade 5 students of 74.20% while the highest is in grade 6.

This is because in grade 5 for problem solving indicator with scientific method only get percentage equal to 69,1% whereas the highest percentage that is equal to 79,9% is on indicator of work of scientist. In grade 6 problem solving with scientific method is the lowest percentage that is equal to 72.84% the result is higher than class 5. While for the indicator of scientific work in grade 6 the percentage of 82.6% higher than class 5. In the class 6 at the age of 11-12 years of thinking they are partly able to think abstractly, grade 6 students have been able to conserve the logic of classes and relations knowledge of the numbers associated with the real thinking Piaget [22]. This is reinforced by the opinions and research results Radjavi [23] that some of the materials science the higher class the more abstract, therefore, to grade 6 because they're used to things that are abstract, so that when given things abstracts related to the nature of science they are familiar. However, no research results of Guyon, Maurin, & McNally [24] that there was no significant difference in the ability, if their age is not too significant. That is the reason why there is a decrease in understanding in grade 5 students, when compared with other classes.

3. Understanding comparison Itself Natural Science Every Class and Between Men and Women of all schools

From the results of the questionnaire calculation of the nature of science classified into the class and also classified by sex obtained data as follows: From Figure 5 it is known that the percentage of 3rd graders who understand the science lesson with 7 indicators are; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists

work 74.25%, the percentage of female students 75.75%.

Percentage of 4th graders who understand science lesson with 7 indicators; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain nature, and how scientists work 76.68%, the percentage of students of grade 3 of women 77.02%.

Percentage of the number of 5th graders who understand the science lesson with 7 indicators namely; durable and tentative, based on observations, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws of, how to identify and explain the nature and workings of scientists at 75.69%, the percentage of female students in grade 3 at 72.73%. Percentage of the number of 6th grade male students who understand the science lesson with 7 indicators namely; durable and tentative, based on observation, based on empirical data, problem solving, scientific method, facts, principles and laws as big as, how to know and explain the nature, and how the scientist work for 77.59%, the percentage of female grade 3 students 77.73%.

Based on the results obtained then we can know that the average grade 3 female students who understand the science lesson of 75.75%, male students grade 3 average of 74.25% with. Fourth grade female students who understood the average science lesson 77.02%, male students grade 4 average of 76.68%. 5th grade female students who understand the science lesson average of 72.73%, 5th grade boys average 75.69%. . While female students grade 6 the average of 77.73%, male students grade 6 the average of 77.59%. This means that the results of the data show that the lowest understanding of science learning is found in 5th grade female students that is 72.73% while the highest is found in 6th grade female students of 77.73. When viewed from the age factor then this may happen because there are differences in cognitive abilities due to their chronological age. This is reinforced by the opinions and research of Fathman [25] which states that there is a significant relationship in terms of the ability to speak in terms of age, although it has no direct effect but no contribution in terms of language skills to understand the nature of science. This is in line with the results of the study Ayotola & Adedeji [26] that there is a significant relationship between age with students' mathematical ability and the ability of other understandings. But if you look at the decline of grade 4 to grade 5, in this case supported by the opinion and the results of Allaire & Marsiske [27] which states that if the chronological age is not too far adrift, it will not be a significant difference in terms of their understanding. This is supported by Meyer, Ray, & Middlemiss [28] which states that a causal relationship between chronological age and mental age as long as there is not too far adrift of the difference is not significant.

From the graph can also be concluded that the greatest and most small alike female, but of a different class, it can occur due to differences in gender did not significantly affect the ability of understanding the nature of science. Some studies show that the achievement of student achievement, turned out ta also there is a difference. Women almost always have lower academic achievement than men. One study conducted by Meighan [29] on the results of the General Certificate of Education (GCE) in the United States, it produces the data. First, until the age of 11 years, men and women generally have relative achievement levels are not much different. Second , comparison the number of boys and girls who received grades of "A", on some subjects, show the results: Physics: 6: 1; Mathematics: 4: 1; Chemistry: 3: 1; Biology: 9: 8; Drawing: 200: 1; Language: 1: 2. More specifically it sought to see the gender gap between women and men in junior high / high school in the acquisition of learning achievement.

Several research studies have found that gender differences affect the learning of

mathematics occurred during primary school age [30]. Other studies stated that the influence of gender differences can be observed in junior high school students Benbow [31] and high school students [32] . In high school , the gap in gender-bent on men found more common, especially in the realm of problem solving and application. However, these differences are small and gender differences can also be reduced over time.

4. Comparison Understanding the essence of science among school

From the calculation of the questionnaire about the nature of science classified into the school, which consists of four schools located in West Java, precisely in Sukabumi and Subang, as well as schools in East Java, precisely in the city of Surabaya, the obtained data in the form of graph as follows:

From Figure 6 note that the percentage of students at SDN Tanjung III who understand science lessons with 7 indicators, namely; durable and tentative, based on observations, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws of, how to identify and explain the nature and workings of scientists at 75.73%, the percentage of students at SDN Serangsari of 732 , 73%, the percentage of students at SDN II Cicurug amounted to 70.74% , the percentage of students at SDN II Ketabang amounted to 80.24%, the percentage of students at SDN Gayungan 81.73%, and the percentage of students at SDN Tenggilis of 78.44% . From the table can be obtained information that the schools get the smallest value dalah SDN Cicurug III arriving in the countryside is precisely in The Kidul Street No. 71 district. Cicurug Sukabumi, when viewed from the profile of the school in general we concluded that most of the eight National Education Standards have not been met, the students do not get additional lessons, and the majority of parents were at the level of the lower middle, so that it affects the ability Understand the nature Natural Science comprehensively.

Schools that earn a percentage of understanding the nature of the highest Natural Science there SDN Gayungan, when seen from the school's profile authors to conclude that the school is located on Jl. Gayungan VII No.17-21 are urban areas with dense population, eight National Education Standards have been met, the majority of students get additional lessons both individually and collectively, as well as the income of the average parents of middle and upper, so it is very influential the ability of the comprehensive Understand the nature of science. This was confirmed by research from Anang Yuliawan [33] that the infrastructure is very influential to student motivation. This is supported by the results of Nurmalia [34] with the title Influence of Facilities and Learning Environment Student to Student Achievement Class XI IPS MAN 1 Malang that the results showed that no partial effect between facilities on student achievement class XI IPS MAN 1 Malang, no partial effect between the learning environment on student achievement class XI IPS MAN 1 Malang, and no simultaneous effect between the facility and the learning environment of students in class XI IPS MAN 1 Malang. While the research conducted by Ginting [35] entitled Strengthening of Reading, School of Environmental Facilities and Basic Skills Indonesian Reading and Reading Interest Pupils whose results showed the following: provision of facilities and infrastructure is good or fulfilled accurately and quickly provide a strong influence for CV 5 Continent employee commitment in carrying out its performance. It is similar to a study conducted Mustamid [36] with the title Influence Utilization Learning Facilities in School and Motivation Study on Learning Achievement Class XI at *SMK Negeri 1* Bojonegoro whose study is the use of school facilities and the motivation to have a significant impact on learning achievement ,It is similar to a study conducted Mustamid [37] with the title Influence Utilization Learning Facilities in

School and Motivation Study on Learning Achievement Class XI at SMK Negeri 1 Bojonegoro whose study is the use of school facilities and the motivation to have a significant impact on learning achievement ,It is similar to a study conducted Mustamid [38] with the title Influence Utilization Learning Facilities in School and Motivation Study on Learning Achievement Class XI at SMK Negeri 1 Bojonegoro whose study is the use of school facilities and the motivation to have a significant impact on learning achievement ,

5. Understanding of Science Itself comparison Schools in the City and Village

From the calculation of the questionnaire about the nature of science classified into the school in the village and the city, which consists of four schools located in West Java, precisely in Sukabumi and Subang Regency that are classified in rural schools, and schools located in East Java, precisely in the city of Surabaya as urban schools, the obtained data in graphical form as follows: From Figure 7 note that the percentage of students in schools in the area one who understands the science lessons with 7 indicators, namely; durable and tentative, based on observations, based on empirical data, problem solving, scientific method, in the form of facts, principles and laws of, how to identify and explain the nature and workings of scientists at 71.73% and the percentage of students in schools in the city amounting to 79.31%. Based on the results obtained, we know that on average students who attend school in the city who understand the science lessons at 79.31%, while the region of the village of the average of 71.73%. This means that the results of the data shows that the understanding of science teaching in schools in urban areas is higher than schools in rural areas.

This is because a primary school in the city of his learning process is more effective because it supported infrastructure is more complete. Teacher quality is better. As well as the support of stakeholders well. It s According Suharsimi Arikunto [39], "The facilities are everything that can facilitate and expedite the implementation of a business". The learning facilities are everything that can facilitate and accelerate learning. Students who have a comprehensive learning facility will be easier and more enthusiasm in learning, in order to achieve optimal learning results. Based on the results of Uswatun Hasanah [40] Environmental residence significant effect on learning achievement , This is reinforced by the results of Sri Nadia Padmini [41] entitled "Effects of Learning facilities Learning Motivation and Its Implication of Student Learning Achievement Force Indonesian education university Year 2008". From the results of research show using t-test calculation wherein learning facility (X) positive and significant impact on motivation to learn (Z) with the level of determination of 14.5% and the rest (85.5%) influenced by other factors, then the motivation to learn (Z) positive and significant impact on learning achievement (Y) with the level of determination of 4% and the rest (96%) are influenced by other factors, as well as learning facilities (X) negative and no significant effect on achievement (Z) with the level of determination by 0.6% and the rest (99,4%) influenced by other factors. From the results research and the above discussion it can be concluded that the determinants of understanding the nature of science is actually not from the location of the school, will be but the fulfillment of the National Education Standard. If the eight National Education Standards fulfilled, then certainly the learning achievement will increase.

IV. CONCLUSION

From the discussion, it can be concluded as follows: 1) The difference between the students' understanding of men and women to the nature of science did not differ significantly at only 0.04% ,. 2) The difference between classes understanding of the nature of science can be obtained information that Grade 6 students get the most good percentage, it can be associated

with the stage of development of their chronological age who take effect to their mental age; 3) The difference between classes understanding of the nature of science and the views also of gender, it can be concluded that the age effect on different understandings of the nature of science, but the sexes no effect means; 4) The difference in understanding between the schools to the nature of Natural Science can be obtained information that a school with complete facilities will have an effect on student achievement in this understanding of the nature of science, and 5) the gap of understanding between the location of the school to the nature of science does not mean that the location of the school matter, but influential the meeting eight national education standards, the quality of students is shown by the results of further understanding of the nature of Natural Science good anyway. From some of these factors will be the basis for developing character-based science learning and the approach is scientific.

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