

Application and Impact of Scientific Approaches Physical Education and Sports in School

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ABSTRACT

The aim of this study is to determine the application and impact of the Scientific Approach to Physical Education in Sport and Health. The method used is descriptive method with documentation. This research was conducted at SMA Negeri 15 Medan. In sampling, researchers used total sampling with a total of 307 people. The results of the study: (1) The application of the scientific approach undertaken by the Physical and Physical Education teacher in SMA Negeri 15 Medan. (2) The impact of applying a scientific approach. The conclusion of this study is to provide a good impact in terms of students' knowledge, skills, and attitudes.

Keywords: Application of Scientific Approach. Physical Education Health Sports.

PRELIMINARY

Education is a conscious effort in printing the nation's generation of knowledge, attitudes and skills. Education is one of the efforts to create a generation of competent nations, both in the cognitive, affective and psychomotor domains. there are several business processes in educating, education in one of the schools has a role to educate students.

Physical education is a process of education that is carried out consciously and systematically through various physical activities in order to acquire physical abilities and skills, physical growth, intelligence, and character growth. As a sub-system of national education, physical activity in schools must be followed by all students (Sukendro, 2017). This is also supported by Tarin, et al (2019) that physical education is a subject that involves cognitive, affective and psychomotor thoroughly. The learning process described in the didactic and methodical principles involves all three domains simultaneously and interrelated.

Physical education is a part of education that prioritizes physical activities and mentality development, attitudes and actions for healthy living and the process of interaction between students and the environment that is managed through systematic activities towards good physical growth of children, mental development, emotional and social harmony, in harmony and balance. (Charles Bucher in Soemosasmito (1988: 5), American Alliance for Health, Physical Education, and Recreation (AAHPER) in Soemosasmito (1988: 5), Sukintaka, 2004: 5 in the Journal of Physical Education and Sport by Kusnodo Sugihato Soegiyanto, Husdarta in the Journal of Physical Education and Sports, 2012.

The 2013 curriculum is implemented since the 2013/2014 year as a further step in the development of the KTSP 2006 that includes integrated attitude, knowledge, and skills competencies. In other words, the 2013 curriculum was formed as a refinement of the previous curriculum. Therefore, Kurikulum 2013 is designed with the aim of preparing Indonesian people to have the ability to live as individuals and citizens who are faithful, productive, creative, innovative, and effective and able to contribute to the life of society, nation, state, and world civilization (Anwar 2014: 3). The 2013 curriculum is designed to strengthen student competency in terms of knowledge, skills, and attitudes as a whole. This integrity is the basis in the formulation of the basic competencies of each subject, including the basic competencies of attitude groups, the basic competencies of knowledge groups, and the basic competencies of skills groups (Agustanul Akmal, Tono Sugihartono, Bogy Restu Divine, 2018)

The 2013 curriculum emphasizes character education, especially at the elementary level, which will be the foundation for the next level. Through the development of 2013 curriculum which is character-based and competency-based, it is hoped that this nation can become a nation of dignity, and its people get added value, and the value of jula that can be offered to other people and other nations in the world, so that they can compete, side by side, even competing with other nations in the global arena. According to Mulyasa (2013: 7). Character education in the 2013 curriculum aims to improve the quality of the process and educational outcomes, which lead to the formation of character and noble character of students in full, integrated, and balanced, in accordance with the competency standards of graduates in each educational unit.

The 2013 curriculum is a curriculum that uses a scientific approach and authentic assessment directed at character education, which aims to prepare Indonesian people to have the ability to live as individuals and citizens who are faithful, productive, creative, and innovative and able to contribute to community life, nationhood, state, and world civilization. So hopefully Indonesia will become a better country and be able to compete with other developed countries. (M. Khudhori, Abdul Rachman Syam Tuasikal. 2015).

In general, learning with a scientific approach is carried out through a number of steps:

- a. Observing a phenomenon to identify the problem you want to know,
- b. Formulate questions based on the problem you want to know and reason to formulate hypotheses or temporary answers,
- c. Collecting data or information with various techniques,
- d. Analyze data or information to draw conclusions,
- e. Communicate conclusions.

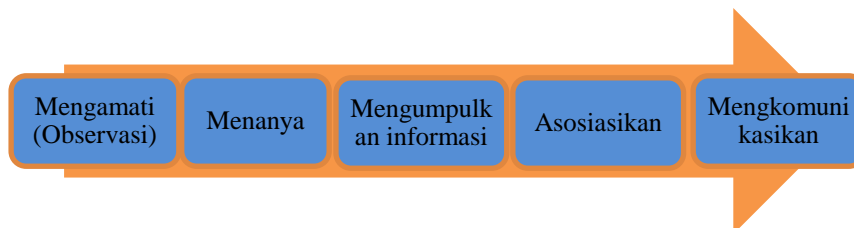


Figure 1 Steps in Implementing a scientific approach, (Ministry of Education and Culture Permen 81A)

The learning process that implements a scientific approach will touch on three domains, namely: attitude (affective), knowledge (cognitive), and skills (psychomotor). With such a learning process, it is expected that learning outcomes will produce productive, creative, innovative and effective students through integrated attitudes, skills, and knowledge. Consider the following diagram.

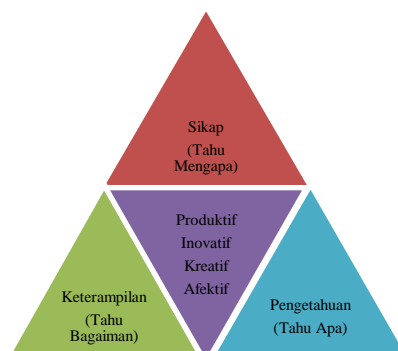


Figure 2 Learning Dimensions Must Be Applied to a Scientific Approach and 3 areas touched by the Ministry of Education and Culture: 2013

The explanation of the scientific learning approach diagram (scientific approach) by touching the three domains can be explained as follows: The realm of attitude embodies the transformation of substance or teaching material so that students “know why”, The realm of skill embodies the transformation of substance or teaching material so that students “know-how”, the realm of knowledge takes the transformation of substance or teaching material so that learners “know what”. The end result is an increase and balance between the ability to be good human beings (soft skills) and people who have the skills, and knowledge to live properly (hard skills) of students which include aspects of competence, attitudes, knowledge, and skills. So the physical education teacher should have the competence that meets standard in order to understand the capabilities and talents of each learner. In its implementation, the physical education learning process has not been as expected (Albadi Sinulingga, Suprayitno, Dian Pertiwi, 2019).

According to Sani (2014: 76) Several models, strategies, or learning methods can be applied by integrating elements of a scientific approach to learning. Suitable methods for inquiry-based learning approaches (Inquiry Learning), discovery learning, problem-based learning, and project-based learning and other relevant methods. Meanwhile, the Ministry of Education and Culture's Middle School learning process strengthening guide Kemendikbud (2013) explained that models or methods of learning in implementing the 2013 curriculum using a scientific approach include problem-based learning, project-based learning, and cooperative learning.

METHOD

The research method is a method used in a study to achieve research objectives. The research method or often also called the research methodology is a design or research design. This design contains the formulation of the object or subject to be studied, data collection techniques, data collection procedures and analysis regarding the focus of a particular problem.

The method used in this research is descriptive to describe the existence, which took place at the present time or in the past. There is a fundamental difference between the notion of population and sample in research with descriptive methods. In descriptive research, the population is defined as a generalization area consisting of: objects or subjects that have certain qualities and characteristics that are determined by researchers to be studied and then conclusions drawn. In research with descriptive methods do not use the term population but are called social situations consisting of three elements, namely: places, actors, and activities that interact synergistically. The social situation can be stated as an object of research that wants to be understood in research can observe in depth the activities of people in certain places, namely students of SMA Negeri 15 Medan class XI.

Sugiyono (2010: 216) argues that the sample is not called a respondent, but as a resource, or participants, informants, friends, and teachers in research. The sampling technique in this study uses a total sampling technique. Total sampling is a data collection technique by making the entire population into a sample in the study that is all students of class XI in SMA Negeri 15 Medan.

Data collection techniques in this study used the documentation method. According to Arikunto (2006: 158). The documentation method is used to get data in the form of written objects. Examples of objects in question can be in the form of documents, list of names, number of students and student learning outcomes (grades) in Physical Education, Sports and Health class XI in SMA Negeri 15 Medan. Data sources can be classified through 3 levels:

1. Place, the source of data that presents the display in the form of a state of stationary and moving. Silent, for example the room, equipment, objects, colors, and others. Moves, such as activities, performance, vehicle speed, the rhythm of singing, dance moves, teaching-learning activities, and so forth.
2. Paper, which is a data source that presents signs in the form of letters, numbers, images, or other symbols. With this understanding, the paper is not limited to paper, but can be in the form of stone, wood, bones, palm leaves, etc., which are suitable for the use of documentation methods.

The documentation method can be implemented in several stages, namely:

- a. Guidelines for documentation that contain outlines or categories to be searched for.
- b. The documents that have been collected are in the form of a list of learning outcomes (grades) of SMA Negeri 15 Medan class XI students which will then be processed with descriptive analysis.

The instrument used in this study was in the form of collecting a list of learning outcomes or grades (report cards) from the Physical Education, Sports and Health teachers.

RESEARCH RESULTS AND DISCUSSION

Based on the data obtained, an analysis of the research variables was conducted: data on learning outcomes (report cards) of class XI students at SMA Negeri 15 Medan who applied a scientific approach to the learning process in the 2016/2017 year from each aspect (competency) as follows:

Table 1. Percentage of Student Competence at SMAN 15 Medan

| No | Class | Total | Knowledge | Skills | Attitude |
|-----------------------|----------|-------|-----------|--------|----------|
| 1 | XI IPA_1 | 40 | 34.26 | 33.56 | 33.34 |
| 2 | XI IPA_2 | 45 | 36.84 | 38.39 | 36.48 |
| 3 | XI IPA_3 | 47 | 38.70 | 38,75 | 37.85 |
| 4 | XI IPA_4 | 46 | 37.40 | 37.58 | 37.17 |
| 5 | XI IPA_5 | 46 | 37.50 | 37.54 | 37.18 |
| 6 | XI IPA_6 | 44 | 35.92 | 36.00 | 35.59 |
| 7 | XI IPA_7 | 46 | 37.00 | 36.75 | 35.93 |
| 8 | XI IPS_1 | 32 | 26.35 | 26.19 | 25.70 |
| 9 | XI IPS_2 | 36 | 28.41 | 28.69 | 28.57 |
| 10 | XI IPS_3 | 36 | 28.25 | 28.24 | 28.22 |
| 11 | XI IPS_4 | 36 | 28.21 | 28.18 | 28.16 |
| Average Lowest Value | | | 26.35 | 26.19 | 25.70 |
| Average Highest Value | | | 38.70 | 38,75 | 37.85 |

The data obtained is converted into a value scale of 4 in accordance with the 2013 curriculum implementation guidelines.

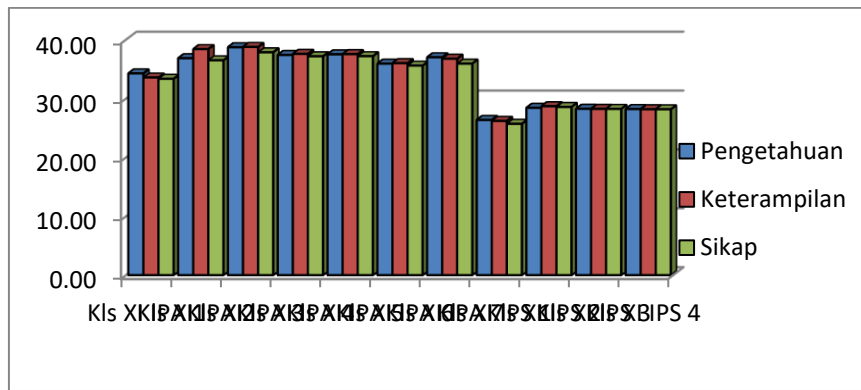


Figure 3. : Comparison Graph of Competency Percentage Results for Class XI Students of SMA Negeri 15 Medan

The results of data analysis that presented the application of a scientific approach to physical education, sports, and health lessons and their impact (knowledge, skills, and attitudes) on SMA Negeri 15 Medan class XI students in the 2016/2017 year, obtained a percentage value of each aspect (knowledge, skills, and attitudes) namely:

- a. Knowledge Aspects = 26, 35% - 38,70 %
- b. Skills Aspect = 26,19% - 38,75%
- c. Attitude Aspects = 25,70% - 37,85%

This shows that the application of scientific approaches to physical education, sports and health lessons has an impact on students in SMA Negeri 15 Medan class XI in the 2016/2017 year. The impact intended by researchers is that the learning outcomes (report cards) of students are loaded or summarized as a whole based on 3 aspects of assessment namely the assessment of students' knowledge, skills possessed by students (sports skills), and students' attitudes that are reflected in daily behavior day.

Of the 11 classes that have advantages in competence of knowledge, skills, and attitudes, namely class XI IPA_3 with the following data:

Table 2. Percentage of Best Class Student Competency

| No | Class | Total students | Knowledge Aspects | Skills Aspect | Attitude Aspects |
|----|----------|----------------|-------------------|---------------|------------------|
| 1 | XI IPA_3 | 47 | 38.70 | 38,75 | 37.85 |

Whereas the class that has the same competency achievement in all three aspects is in the class:

Table 3. Percentage of Student Competency Has an Average Value The same percentage

| No | Class | Total students | Knowledge Aspects | Skills Aspect | Attitude Aspects |
|----|----------|----------------|-------------------|---------------|------------------|
| 1 | XI IPA_4 | 46 | 37.40 | 37.58 | 37.17 |
| 2 | XI IPA_5 | 46 | 37.50 | 37.54 | 37.18 |
| 3 | XI IPA_7 | 46 | 37.00 | 36.75 | 35.93 |

The details can be described in the form of a table of groups of students of Natural Sciences at SMA N 15 Medan, as follows:

Table 4. Percentage of Student Competencies in Group XI Natural Sciences

| No | Class | Total students | Knowledge Aspects | Skills Aspect | Attitude Aspects |
|----|----------|----------------|-------------------|---------------|------------------|
| 1 | XI IPA_1 | 40 | 34.26 | 33.56 | 33.34 |
| 2 | XI IPA_2 | 45 | 36.84 | 38.39 | 36.48 |
| 3 | XI IPA_3 | 47 | 38.70 | 38,75 | 37.85 |
| 4 | XI IPA_4 | 46 | 37.40 | 37.58 | 37.17 |
| 5 | XI IPA_5 | 46 | 37.50 | 37.54 | 37.18 |

| | | | | | |
|---|----------|----|-------|-------|-------|
| 6 | XI IPA_6 | 44 | 35.92 | 36.00 | 35.59 |
| 7 | XI IPA_7 | 46 | 37.00 | 36.75 | 35.93 |

The details can be described in the form of a table from a group of IPS Class students in SMA N 15 Medan, as follows:

Table 5. Percentage of Student Competencies in Group XI IPS

| No | Class | Total students | Knowledge Aspects | Skills Aspect | Attitude Aspects |
|----|----------|----------------|-------------------|---------------|------------------|
| 1 | XI IPS_1 | 32 | 26.35 | 26.19 | 25.70 |
| 2 | XI IPS_2 | 36 | 28.41 | 28.69 | 28.57 |
| 3 | XI IPS_3 | 36 | 28.25 | 28.24 | 28.22 |
| 4 | XI IPS_4 | 36 | 28.21 | 28.18 | 28.16 |

DISCUSSION OF RESEARCH RESULTS

The explanation above shows that each class with students who are in it have different levels of ability. There are some students who have good values of knowledge, and skills, only get a score that is not good in attitude assessment. Likewise with students whose grades of knowledge are unsatisfactory, but have good results in the assessment of skills, and attitudes. However, it does not mean that there are differences in the percentage results of each aspect (competency) which means negative in the assessment process, but this shows that each child has different levels of ability, and character.

The success of learning done by the teacher as long as it does not depend on the teacher's role alone, but also more emphasis on the active role of students themselves. This is evident from the results of learning that emphasizes the scientific approach or better known as the scientific approach.

In this study, a description was obtained that physical education learning in class XI of SMAN 15 Medan by using a scientific approach, proved the existence of variations in the achievement of learning competencies ranging from knowledge, skills, and attitudes. This means that the learning that was carried out previously did not yet have variations in the achievement of competencies possessed by students, because the resulting learning still occurred the remedial process in each learning material delivery in each class both in the Natural Sciences, and Social Sciences.

But since taking a scientific approach, the remedial process in learning physical education, and health sports in class XI SMAN 15 Medan, has become a small percentage of students who take part in the remedial process to achieve the delivered subject matter.

From the results of this study will be obtained a picture that will provide an overview of the scientific approach to physical education and health sports in high school students in particular and more broadly in learning physical education, sports and health. So that this picture will be used as a model of an appropriate scientific approach in providing physical education, sports and health learning materials in the environment of class XI high school students, so that the learning achievement can be successful, especially in achieving the minimum completeness criteria (KKM) in the school.

As material at the conclusion of this study that the scientific approach to the subjects of physical education, sports and health in class XI students of SMAN 15 Medan in the 2016/2017 year had a positive impact on all three aspects (competencies) of knowledge, skills, and attitudes.

CONCLUSIONS AND SUGGESTION

Conclusion

From the results of research and data analysis and exposure in the discussions that have been carried out, it can be concluded that the application of scientific approaches to Physical Education, Sports and Health subjects in SMA Negeri 15 Medan class XI 2016/2017 academic year has a good impact on aspects of knowledge, skills, and attitudes of students (students). This can be seen from the percentage of each aspect of student learning outcomes (report card grades). By applying a scientific approach, assessments given to students

no longer only cover one or two aspects but students are assessed as a whole through an assessment of aspects of knowledge, skills, and attitudes.

Suggestion

Based on the results of the research and conclusions, suggestions are made as follows: 1) The principal and teachers implement physical education and sports learning health should use a scientific approach because this approach is expected to provide maximum learning outcomes for students. 2) The Principals and Teachers in Medan 15 High School in order to maintain and improve the quality of teaching by applying a scientific approach, especially in Physical Education, Sports and Health subjects. 3) Educational Institutions to continue the implementation of the scientific approach set forth in the 2013 curriculum from elementary to high school. This is because the 2013 curriculum with a scientific approach in the learning process is able to develop students as a whole both in knowledge, skills, and attitudes or behaviors.

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