Teacher’s Perception Towards Implementation of Service Learning Model during Teaching and Learning of Biology in Senior High Schools in Yogyakarta District

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Abstract. This study aimed to determine the teacher’s perception towards implementation of service learning model during teaching and learning of Biology in senior high schools based on the; the status of school, i.e. state Senior High School and private Senior High School. This study used survey method to collect data from a sample population of 46 Biology teachers in 24 senior high schools in Yogyakarta district, Yogyakarta special region province, Indonesia. Amongst these schools, 11 state schools and 13 private schools based on ownership status. Data collection techniques used was questionnaires and data analysis was done by using descriptive statistical analysis. The study results showed that 32 % teachers from state was searching information about service learning and understand it. However just 9.09 % that implement it in biology learning. 37.5 % teacher from privately owned schools was searching information about service learning and understand it and 12.5 % apply it in biology learning. Both had a positive perception towards the implementation of service learning model on certain learning materials like disorders and diseases that attack the human body system.

Keywords: Teacher’s perception, Service learning model, School characteristics

1. Introduction

Entering the 21st century, there have been changes in various fields of life including education. Education must be visionary and future oriented, in the face of stunning scientific and technological innovations and changes. Education through learning in the 21st century focus to prepare students for the future on critical thinking, creativity, communication and collaboration. 21st century standards, assessments, curriculum, instruction, professional development and learning environments must be aligned to produce a support system that produces 21st century outcomes for today’s students.

21st century learning environments is designed with create learning practices, human support and physical environments that will support the teaching and learning of 21st century skill outcomes. Support
professional learning communities that enable educators to collaborate, share best practices and integrate 21st century skills into classroom practice. Enable students to learn in relevant, real world 21st century contexts (e.g., through project-based or other applied work). Allow equitable access to quality learning tools, technologies and resources. Provide 21st century architectural and interior designs for group, team and individual learning. Support expanded community and international involvement in learning.

The essence of biology learning is learning to interact with the environment, recognizing real life processes and trying to identify themselves as living things. The learning process of biology cannot be separated from the surrounding as a source of learning, both the natural environment and the social environment. The environment as a biological laboratory stores various phenomena and problems that need to be revealed and solved scientifically. Students have had some initial knowledge that comes from the surrounding environment including cultural background, family, and other things that they directly hear, see, experience and feel.

A new concept that students learn in the classroom will be more easily accepted if it is associated with the knowledge scheme that has been owned so that the assimilation process or association occurs. The solution that can be done through learning is applying a model or method of learning that focuses on the interaction of students with the surrounding environment, developing the skills of students to apply the knowledge acquired in the classroom to the problems around them. Teachers need to provide material that is linked to the real life of students. One learning model that can be applied is service learning.

Service learning is a learning model that connects positive and meaningful actions in society with academic learning, personal development and responsibility as citizens. Service learning is chosen because in it there is an element of 'service activities' which is the spirit to develop people, that servanthood is the soul for developing people. Serving that is beneficial is to serve things that really happen in everyday life. Learning must be closely related to real problems and tasks. Thus, the learning done can be used to solve problems faced by themselves or help serve others in solving problems. With service learning, students are taught to make a real change from simply accepting knowledge to themselves to the knowledge of helping others [1].

The implementation of learning is influenced by several factors (1) teachers (2) students and (3) infrastructure. Teacher performance is influenced by various factors, one of which is perception. Perception is the ability of the brain to translate a stimulus or process to translate a stimulus that enters the human senses. Factors that influence teacher perceptions are from the teacher itself and factors from the school. Factors of yourself include teacher teaching experience, academic background, often or not participating in training and others. While the factors of school include school location, school favorite level, school physical condition, school vision and others.

Senior High school has a category based on the status and vision-mission formulated by the school. Based on the ownership status of schools in high schools can be divided into two, namely public schools and private schools. Based on the vision and mission of high schools there are general and religious ones. In religious schools its vision and mission are more inclined towards religious direction. Religious schools integrate religious values in the learning process rather than public schools. Religious schools are more inclined to integrate religious values, such as moral (affective aspects) in the general learning process rather than high school.

Schools run by the government are called public schools. There are also non-government-run schools called private schools, private schools may be for children with special needs when the government cannot provide special schools to them; like religious schools, namely Islamic schools, Christian schools and others. Public and private schools have different characteristics. Private schools are organized to meet the special needs that state schools cannot provide, for example in-depth religious education or sports education that studies deeper sports. Based on the background above, it will be examined the
perception of high school biology teachers in Yogyakarta City on the application of service learning models based on school status.

2. Materials and Method

2.1 Materials

2.1.1 Service Learning

Service learning is a pedagogical strategy in which students are involved in community service that will enhance understanding of a concept and enable students to make contributions to their community [3]. Service learning is a guided research-based teaching method or classroom learning that is applied through actions based on the needs of authentic communities which in the process allows for youth initiatives and gives structured time for reflection on service experience and demonstration skills and knowledge gained [2].

When linked to the times, where education is often criticized because it is not relevant to the lives and needs of students, and often students are isolated from the events that occur around them, then service learning is done as an answer to connect students with their communities and put them in challenging situations, where they deal with real problems. Thus, service learning gives satisfaction to students because they realize that they can make a positive impact on society [3]. The characteristics of service learning are (1) the main learning objectives are academic and community needs, (2) involving mutual collaboration between students, teachers, community members, community organizations and educational institutions for common goals, (3) include critical reflection and assessment processes that are designed to produce and document meaningful learning and the results that have been obtained [4].

Service learning provides general characteristics obtained from the results of authentic experience (1) providing positive, meaningful and real effects for students (2) involve skills related to teamwork and community involvement (3) overcome complex problems with complex settings (4) offer opportunities to be involved in problem solving by requiring students to gain contextual knowledge in their community rather than just using general knowledge such as those from textbooks (5) service learning offers the opportunity to develop critical thinking skills, namely the ability to identify important questions or issues in real situations (6) service learning has the opportunity to make students become meaningful personal, produce emotional consequences, challenge ideas, thus supporting learning, social development, emotional and cognitive [5].

2.1.2 Teacher Perception

The implementation of learning is influenced by several factors (1) teachers (2) students and (3) infrastructure. Teacher performance is influenced by various factors, one of which is perception. Perception is processes by which the brain receives, selects, modifies and organizes incoming nerve impulses that are the result of physical stimulation [6]. Perception is the organization and interpretation of sensory information [7]. Perception becomes fuller, meaningful and accurate because of our experiences. Unless we know the concept, we will not be able to interpret object in the environment. A person needs to interpret sensory information and this can be done on the basis of past experience of the same, similar or related phenomenon [8].

2.2 Method

2.2.1 Research Design

This research is a qualitative research with the type of survey research. This research did not give any treatment to the research subject.
2.2.2 Research Subject

Subjects included 46 Biology teachers from 22 State High School Teachers and 24 Private High School Teachers. In the selection of research subjects is not based on the level of a particular class.

2.2.3 Data, Instruments and Data Collection

The data was taken using a questionnaire to obtain information and data in the form of written responses directly from respondents to the statements submitted. Teacher would answer about the implementation of service learning models in biology learning. Data of teacher’s perceptions are grouped into 3 aspects: (1) teacher knowledge about service learning, (2) service learning implementation, and (3) biological content knowledge that potential to be taught with service learning. The teacher knowledge will reveal whether the teacher is searching information about the service learning model and understand it or not. Meanwhile, the implementation of service learning will reveal whether the teacher has implement the service learning model or not. The teacher knowledge are categorized into 2 alternative answers, having searched and understood it and never before. Implementation of service learning are categorized into 3 alternative answers: Never, Ever (once) and Ever (more than once). In the aspect of biological content knowledge knowledge, the teacher chooses one of the list of materials provided. List of biological material provided is material related to disorders and abnormalities in the human body system, environmental changes, biology cell and molecular, biodiversity, and biotechnology.

2.2.4 Data Analysis

Data analysis was done by using descriptive statistical analysis with percentage.

3. Result and Discussion

3.1 Result

The teacher’s perception of the service learning implementation is focused on three aspects: (1) teacher knowledge about service learning, (2) service learning implementation, and (3) biological content knowledge that potential to be taught with service learning. Based on the data that has been collected between one teacher and another teacher has a different perception. Perception of service learning models in terms of the category of school ownership status, namely state and private schools. The following graph is about the teacher knowledge aspect.
Based on the graph it can be seen that 68% of biology teacher in state school have never sought information about service learning and 32% have searched and understood it. Meanwhile, 62.5% teacher in private school have never sought information about the service learning model and 37.5% have sought and understood it.

The following graph shows the service learning implementation.

Graph 2. Service Learning Implementation

Based on the graph, it can be seen that 90.91% teacher of state schools have never applied, 9.09% have implement at once, 0% have implement more than once. Meanwhile, 87.5% teacher of private school never implement service learning, 12.5% have implement at once, and 0% have implement more than once. The following graph shows the biological content knowledge that potential to be taught using service learning.

Graph 3. Biological Content Knowledge
Based on the graph, it can be seen that the perceptions of each teacher related to the material that has the potential to be taught using different service learning models. The most potential material according to the teacher's perception is the disorder and abnormalities in the human body system.

3.2 Discussion

Based on the results of the survey, the aspects of teacher's knowledge of service learning models are still low both for public and private school. This is indicated by the low percentage of teachers who have never sought information related to service learning, assuming that the teacher also has no knowledge of service learning. As many as 32% of State School and 37.5% of Private School Teachers have sought information about the service learning model and understood it, meaning having more knowledge. If the percentage of both is compared, private school teachers are higher than public high school teachers. A total of 9 private school teachers stated that there were seminars from the school foundation related to service learning. The seminar was held because the service learning model can be established to achieve the school's vision and mission related to service to others. However, the seminar related to service learning is still valid for all subjects in high school, not specific to Biology subjects.

Based on aspects of service learning, 9.09% of state school biology teachers and 12.5% of private school biology teachers have applied service learning once. This shows that not all teachers who have sought information related to service learning and understand it, then apply it to learning biology. Many factors become obstacles for teachers not to implement a model to learning, one of which is time allocation. When compared, private school teachers have a higher percentage of service learning applications than public schools. This is related to the vision and mission of the private school about service "service", so that the learning carried out is designed to achieve this vision.

Service learning activities that have been carried out by teachers are still integrated with other subjects in the Live in program, where students enter the community to learn about real life in the community. Service learning activities can be carried out through 4 models: (1) Model Placement, students are placed or choose their own community and work with clients. Services provided by students will become learning tools or media. Students get access from the population or issues related to their learning materials which then provide assistance needed by the community. Students can be placed in the same location or different locations depending on the direction of the teacher (2) Presentation Model, students work in small groups and make presentation material from the learning material and present it to the community or group that needs the information. Before going to the field, the teacher asks students to present it in class to get feedback (3) Product Model, students make products (such as videos, brochures, websites, etc.). This product is then given to the community with a specific purpose. Students can work in small groups to develop products or in the form of class products for the community selected (4) Project Model, collaboration of students with the community to implement a project that is integrated with certain materials and meets the needs of the identified community.

State and private school teachers have a perception that biological content knowledge about disorders and abnormalities caused by viruses has the potential to be taught using service learning, after that the material changes in the environment. Biological content knowledge that contains many phenomena or cases and related to people's lives is suitable to service learning.

4. Conclusion

Based on the result, can conclude that 32% teachers from state was searching information about service learning and understand it. However just 9.09% that apply it in biology learning. 37.5% teacher from privately owned schools was searching information about service learning and understand it and 12.5% apply it in biology learning. Both had a positive perception towards the implementation of service learning model on certain learning materials like disorders and diseases that attack the human body system.
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