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Training on The Use of KIT Science Laboratory Equipment for Teachers and Students to Support The Implementation of The Independent Curriculum

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Abstract: The aim of the service is to train the skills of teachers and students in recognizing, designing and using the set of practical tools in the Integrated Science KIT based on the Independent Curriculum. To train teachers and students in strengthening basic science concepts according to the basic concepts related to the available science KIT. To train science KIT teachers and participants on the components of each existing Science KIT set/box and relate them to existing basic science concepts. to train teachers' skills in assembling or assembling science KIT tools. To train the skills of teachers and students in using the KIT Science tool. To train the skills of teachers and students in designing experiments according to the existing Science KIT. To train the skills of teachers and students in using the Science KIT set as a learning medium. To be an accompaniment to the use of Science KIT in learning. The method in PkM activities uses training methods. The results of PkM activities have a positive impact on teachers and students in the use of science practicum laboratory equipment at Muhammadiyah Langsa High School.

Keywords: Training; Utilization of the KIT Science Laboratory; Independent Curriculum

Introductions

In Indonesia, the curriculum has been implemented many times, including in 1947, 1964, 1968, 1973, 1975, 1984, 1994, 1997 (1994 curriculum revision), 2004, and 2006 (Education Unit Level Curriculum). In 2013, the government through the Ministry of National Education changed it back to the 2013 Curriculum (Kurtilas), and in 2018 it was revised to become the Revised Kurtilas (Ulinniam et al., 2021). Until now, a new curriculum has emerged which is called the independent curriculum.

The independent curriculum was created because in the pandemic era education experienced a setback. This is because there is no offline teaching and it is replaced by online. Online learning is not conducive because some students do not have devices and limited internet access. Facing this gap and concerns about disruption to learning, the government developed an independent curriculum which aims to overcome the learning crisis in Indonesia which is getting worse due to the Covid-19 pandemic (Rifa'I et al., 2022).

The independent curriculum prioritizes freedom of thought and creativity. One of the programs presented by the Ministry of Education and Culture in launching the independent curriculum was the start of the driving school program. This school program is designed to help each school create a lifelong generation of students by reflecting the personality of Pancasila students. Therefore, the role of teachers is very necessary to achieve this success (Ainia, 2020).

The educational process is able to produce creative and innovative ideas in the dynamics of current developments. Curriculum development is one way to improve the quality of education. According to (Munandar, 2017) correct education policies will be reflected through the implementation of the curriculum, because "curriculum is the heart of education" which determines the continuity of education.

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In implementing the independent curriculum, each education unit must prepare itself so that its implementation can run optimally. Therefore, teachers as part of the education unit must be ready to carry out the implementation of this curriculum. The preparations that must be made are related to understanding the implementation of the independent curriculum. One of the insights prepared is the use of KIT Science as a practicum learning medium and also as a tool to support curriculum implementation.

Practical learning has many advantages, including practical learning providing experience for students to observe and understand natural phenomena (Hasruddin & Rezeqi, 2012). Science learning through practicums can help students link two domains of knowledge, namely the domain of real objects that can be observed and the domain of mental knowledge (Murniati & Yusup, 2015). Thus, in laboratory activities, students connect the results of their observations with the knowledge or theories they have.

Natural science education, especially chemistry, is a science that allows practical activities to be carried out. Practicum allows students to use all their potential (cognitive, affective and psychomotor), especially their mental processes to discover for themselves the concepts or principles of chemistry and other mental processes (Lasia, 2020). Practicum is a learning method that functions to clarify concepts through direct contact with tools, materials or natural events, improve students' intellectual skills through observation or search for complete and selective information that supports practical problem solving, training in solving problems, applying knowledge and skills regarding the situations faced, training in designing experiments, interpreting data, and developing a scientific attitude (Faj et al., 2018; Suryaningsih, 2017). When engaged in the process of scientific investigation, students can identify questions that can be answered through scientific investigation, use appropriate tools and techniques to collect, analyze, and interpret data, develop descriptions, explanations, predictions, and models using evidence, test those explanations against current scientific knowledge, and communicate their ideas to others (Kizilaslan, 2019).

Integrated Instrument Components (KIT) are equipment that can be developed and packaged in the form of a teaching unit, which is shaped like a series of tools used to test process skills in the field of science (Science) and is equipped with instructions for use. KIT Science (Science) functions as a messenger so that students are able to understand the concepts of the activities they carry out (Rosnita, 2016). Therefore, it can be said that the factor that causes students to understand the material being taught more quickly is the Science KIT. A large percentage of the knowledge obtained by students comes from simulations, modeling or learning experiences, in other words students practice or experience themselves, whether using the original form or form of the material being taught or through objects or events that are manipulated to approach the actual situation.

Educators have the duty of regulating responsibility for ensuring that no qualified learner with a disability can be excluded or deprived of benefits based on their disability (Michael & Wohlers, 2019). The fact on the ground that teachers do not carry out authentic performance assessments in practicum activities is due to the fact that the assessments are carried out only based on cursory observations and the activeness of students, so that the assessments carried out do not cover all the expected chemistry subject competencies (Kusumaningtyas, 2018). Visually impaired is a general term used for the condition of someone who has problems or obstacles in their sense of sight. Basically, the visually impaired are divided into two groups, namely total blindness and low vision (Widiastuti, 2019). It is said to be blind if it cannot see two fingers in front of it or only sees light or sufficient light that can be used for mobility orientation. They cannot use letters other than braille. Meanwhile, the so-called low vision are those who, when they see something, must bring their eyes closer, or keep their eyes away from the object they are seeing, or those who have blurred vision when they see an object (Widiyawati, 2019). To overcome vision problems, low vision sufferers use glasses or lenses (Khaeroh, 2020). The impact of the loss of visual function is that someone who is blind will try to rely on other sensory functions to the maximum. Children with blind conditions have limitations or even an inability to receive stimuli or information from outside themselves through their sense of sight (Rahmawati, 2018). Thus, exploration of blind children is carried out by optimizing the other senses, such as touch, sound, and smell (Savira et al., 2019).

The advantage for institutional managers is that the use of practicum kits reduces the costs of implementing practicums, both in procuring practicum equipment, materials and infrastructure (Putri & Widodo, 2018). Various studies have shown that the use of the Science Kit is very helpful in learning, can improve student learning outcomes (Rosidah & Rosdiana, 2019). The use of science KIT is

one of the factors that influences science learning (Rosidin et al., 2020). Using the Science KIT makes teachers more confident themselves in teaching science material (Nurfiyanti, 2017). The results of the study show that one of the problems teachers encounter in carrying out practicums is that teachers do not know how to use practicum tools (Murniati & Yusup, 2017). Teachers do not understand how to use the Science KIT and this makes the level of implementation of practical activities low (Budiyanto et al., 2016).

Based on the explanation above, the service team conducted an initial survey of partners' problems regarding the implementation of practicum learning which could not be used in schools, showing that several PKM objectives were expected to be able to resolve the problems faced by partners in practicum learning regarding the use of Science KIT, so that PKM activities had an impact. positive for teachers and students.

Method

The methods school age children who are still actively involved in learning activities at school. The method for implementing community service activities is in the form of providing training to teachers and students at Muhammadiyah Langsa High School regarding the use of KIT Science laboratory equipment. Implementation of service activities July 20 2022 and location of service at Muhammadiyah Langsa High School.

The stages of community service activities that will be carried out consist of several stages, namely the first stage is a planning stage, where at this stage the team conducts a survey and socialization discusses first identifying the problem and the output expected by the trainees. This activity is carried out to be able to plan and prepare material that will be delivered in training activities on the use of IPA KIT laboratory equipment. Apart from that, the Team held internal discussions regarding the material that would be presented in the training. The second stage in community service activities that will be carried out is the implementation of the activity. This activity was carried out in the form of material delivery by the service team and the practical stage in practical learning using the IPA KIT practicum tool. Next, in the third stage, the service team evaluates the activities that have been carried out.

Result and Discussion

Result

The science practicum training was carried out starting with the observation stage of science laboratory management at Muhammadiyah Langsa High School. Laboratory observations were carried out by inspecting the Muhammadiyah Langsa High School laboratory. This laboratory review is carried out by checking the completeness of the practicum tools, as well as the completeness of the materials needed in carrying out the practicum. In this case, a meeting was also held with the vice principal of the curriculum field to discuss the schedule and participants who would be given training on the use of science laboratory equipment.

Figure 1. Socialization of Community Service Activities

Based on the results of the review, practicum implementation at Muhammadiyah Langsa High School will be carried out for the first time so that there is a need for practical science learning using the KIT Science laboratory equipment. This is in accordance with the research results of Sunarya (2021), a laboratory is a place or facility used for testing/calibration in conditions that should be calm and clean, so that there is no influence from the environment that causes interference with activities and results. The management of the Muhammadiyah Langsa High School laboratory is a teacher in the fields of biology, physics and chemistry.

Based on the observation stage at SMA Muhammadiyah Langsa in carrying out service activities for teachers and students, a training stage will be carried out consisting of several stages so that the activities run effectively, so you can see the stages of service activities below.

The first stage, the service team introduces their biodata and explains the purpose of this service activity. At this stage it can be proven by Figure 2.

Figure 2. Stage of explaining the purpose of community service activities

The results obtained at this stage were teachers and students enthusiastically paying attention, listening and hearing the PkM Team's explanation of the objectives of the training activities that would be given to teachers and students. Next, entering the second stage of activities, the PkM Team provided an explanation of the tools that had been given to the Deputy Principal of SMA Muhammadiyah Langsa for the Curriculum Section so that they could be used in practical biology, physics and chemistry learning. Proof that PkM activities have been implemented can be seen in Figure 3.

Figure 3. Physics Practical Tools for Roller Coaster Design

The PkM team explained step by step the use of the physics practical tool for building a roller coaster in using the tracker application for GLB and GLBB practicum, so that teachers and students know the function of the tool. At the next meeting, the PkM Team explained and provided material on animal anatomy biology and genetics learning, as seen in Figure 4 and 5.

Figure 4. Animal Anatomy Practicum

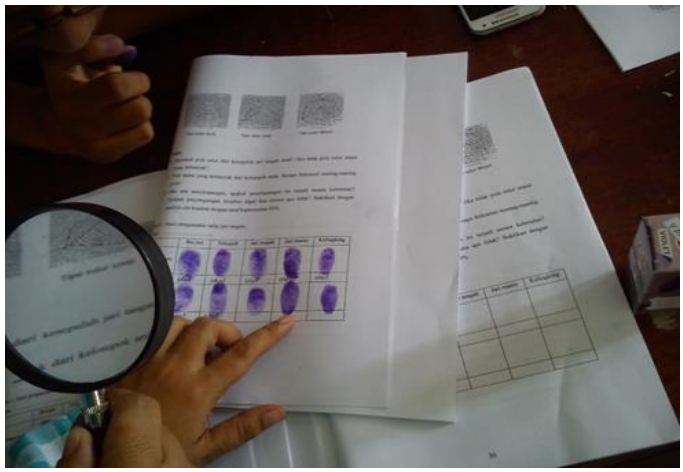

Figure 5. Genetics Practicum

Based on the picture above, it explains the practicum activities provided by the Samudra University PkM Team regarding animal surgery biology practicum to see anatomy and learn genetics. In this activity the teacher and students were enthusiastic to try the results of this activity. so that this activity has a positive impact on knowledge regarding the use of science practicum laboratory equipment. To find out the results of the benefits of PkM activities provided to teachers and students at Muhammadiyah Langsa High School, a questionnaire will be distributed.

The science practicum training activity ended with giving a questionnaire to students to determine satisfaction and effectiveness of the implementation of the science practicum training. The instruments distributed were in the form of response questionnaires which were distributed by students who had taken part in the science practicum training that had been held. The results

of the response questionnaire that was distributed are summarized in Table 1.

Table 1. Student Responses to Science Practicum Training

Indicators	Percen-tage%	Categories
The practical material provided is very interesting	88.5	Very high
The practical material provided is very good helps in increasing students' understanding related to science materia	92.3	Very high
Practical activities carried out are not boring	84.6	Very high
Science practicum activities are carried out with the right and fun method	88.5	Very high
Availability to continue activities science practicum	90.0	Very high
Average percentage	88.78	Very high

Based on Table 1 It explains that the percentage of students' responses to science practicum training with the results of an assessment score, namely an average percentage of 88.78%, is stated to be very high. Furthermore, the results of the student satisfaction response questionnaire in PkM activities can be seen in Figure 6.

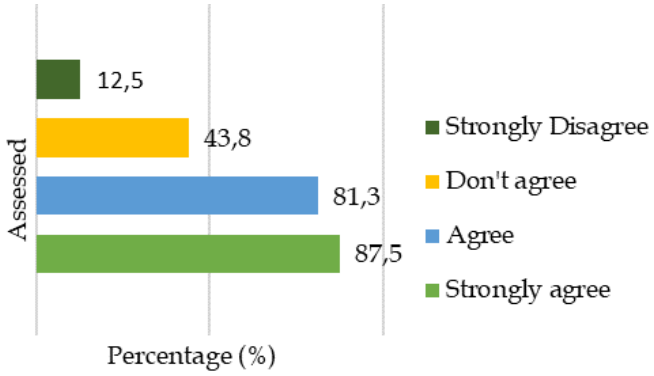

Figure 6. Results of Student Satisfaction Response Questionnaire

Based on the results of the response questionnaire analysis, very good results were obtained, namely 87.5% of students felt very satisfied and 81.3% were satisfied, then 43.4% were declared dissatisfied and 12.5% were declared very dissatisfied. regarding the science practicum training activities carried out. This shows that the practicum training activities that have been carried out have received very good appreciation even though they still require some special attention, namely the suitability of the material for each class carrying out the practicum. Apart from that, 90% of students agreed with the statement that science practicum training needs to be continued in science learning in class so that students are able to easily understand the science material provided rather than just theory.

Discussion

Therefore, it can be concluded that students' understanding increased after carrying out practicum activities using the mixed and solution Practicum KIT. LPMP on the practicum method in learning natural sciences that practicum is a learning method that can clarify concepts through direct contact with tools, materials or natural events, supports the intellectual skills of students by observing and searching for information completely and selectively and can solving practical problems, training in solving problems, applying them in the situations faced, training in designing practical work, interpreting data, and practicing scientific attitudes (Suryaningsih, 2017). The function of practicum is to complement the theoretical material received, to gather courage to discover scientific facts from environmental and social objects, and to increase skills in using tools (Suleman et al., 2019). In practical activities, students carry out direct learning, whether observing, designing, weighing, measuring, reacting, all of which train their skills. This is the reason practicum is very important to do (Purwaningsih, 2019).

Conclusion

The practical training given to students runs smoothly. The results obtained with an average score of 87.5% were declared very high, meaning that PkM activities had a positive impact on teachers and students. Meanwhile, the distribution of satisfaction questionnaires regarding PkM activities with a score of 87.5% stated that they were very satisfied with the training in the use of science practicum laboratory equipment. It is hoped that similar training can be carried out again, especially on the use of science KIT found in school laboratories.

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