

Sustainable Professional Development Supporting Learning Teacher Profession Development Through Learning Models and Innovative Media at SMK Ketintang Surabaya

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ABSTRACT

An important skill that a teacher must have is knowledge of all kinds of learning strategies. This indicates that the teacher is not only required to understand the subject they are delivering but also must have knowledge of strategies in delivering learning material to students. PPGP is the development of teacher competencies which is carried out according to the needs, gradually, continuously to improve their professionalism. Continuing Professional Development Activities to support PPGP must support individual needs in improving teacher professionalism and focus on teacher fulfillment and development to support the PPGP teaching and learning process as well as support teachers to obtain information about new innovative learning models. The purpose of this activity is to be used as a reference in the implementation of PPGP at SMK Ketintang Surabaya and to provide information about various learning models and new innovative media. The results obtained from this activity can improve the performance of educators in implementing innovative learning models and media. This also enables teachers to grow a positive understanding of the importance of innovative learning models and media in carrying out the learning process with students. From the results of the questionnaire obtained, the high score of the questionnaire indicates that the teachers of SMK Ketintang Surabaya feel very helped by this training activity and the teachers feel that this training activity needs to be carried out further training activities

Keywords: *PPGP, Learning Media, Innovative.*

1. INTRODUCTION

Education is an important factor in shaping a nation's civilization. Education can give birth to new discoveries and changes in any field such as science and even technology. [1] [2]. In providing good education, a very important role is needed, and that is the teacher. In 2002, Oemar Hamail explained that the professionalism of teachers is now increasingly emerging into the public sphere, this happens in line with the increasing demands for quality education [3] [4].

Now teachers are in the spotlight because they are figures who become benchmarks in direct interaction with the nation's successors or we can call it as students. Therefore, teachers are required to add knowledge and expertise so that they can give birth to new things [5] [4]. Teachers who can innovate indicate that the figure can develop their creative ideas [6] [7] [8].

An important skill that must be possessed by a teacher is knowledge of all kinds of learning strategies. This indicates that the teacher is not only required to understand the subject he is delivering but also must have knowledge of strategies in delivering learning material to students. Innovative learning models can develop sustainable professionalism for teachers [9] [7] [10]. The mindset will become more mature if more information is obtained and the actions and characters formed in each individual become clearer.

PPGP (Pembangunan Profesi Guru Pembelajar) is the development of teacher competencies that is carried out according to the needs, gradually, continuously to improve their professionalism [11]. So, teachers can maintain, improve, and expand their knowledge and skills to carry out the learning process professionally. Quality learning is expected to be able to increase the

knowledge, skills, and understanding of students. Sustainable professional development to support PPGP is an important part of the teacher professional development process which is the responsibility of the individual teacher as a learning community. Therefore, Sustainable professional Development activities to support PPGP must support individual needs in improving teacher professional practices and focus on fulfilling and developing teacher competencies to support the teaching and learning process [11].

PPGP also supports teachers to get information about new learning models. According to Joyce and Weil, the learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve certain learning objectives and as a guide for learning designers and teachers in planning and implementing learning activities [12]. The learning model is characterized by syntax or learning steps. According to Agus Suprijono, the learning model is the entire presentation of teaching materials that includes all aspects before, during, and after the learning process that has been carried out by the teacher with all related facilities during the teaching and learning process. [13].

According to Joni, the learning approach is defined as a general way of looking at the problem or object of study. The learning approach is also the starting point or the teacher's perspective on the ongoing and general learning process [14]. The learning approach can strengthen and underlie the learning method.

According to Sanjaya, learning strategy is a general pattern of teachers' and students' actions in realizing teaching and learning activities so that strategy refers to the abstract characteristics of actions series from teachers and students in the teaching and learning process [15]. According to Slameto, the learning method is a way that must be passed in the learning process [16]. The method can also be interpreted as the method used to implement the learning activity plan that has been prepared to achieve the expected learning objectives.

Learning technique is a way that a teacher does in applying a specific learning method. Teachers can use a variety of learning techniques in one learning method, depending on the condition of the students in the class. Learning tactics are the style of a teacher in implementing certain learning methods or techniques that are individual. Tactics can also be said to be the hallmark of a person in giving a treatment. For more details regarding the relationship between tactics, techniques, methods, strategies, approaches, and models, it can be seen in the Venn diagram which is located in Figure 1.

The purpose of this PKM (Program Kegiatan Mahasiswa) activity is to be used as a reference in the implementation of PPGP at SMK Ketintang Surabaya and provide information about various learning models and innovative media. The benefits for teachers are that teachers can know and apply various models and innovative learning media so that Ketintang Vocational School can become an effective and better learning

institution and can be a forum for increasing competence and dedication in providing quality educational services to students.

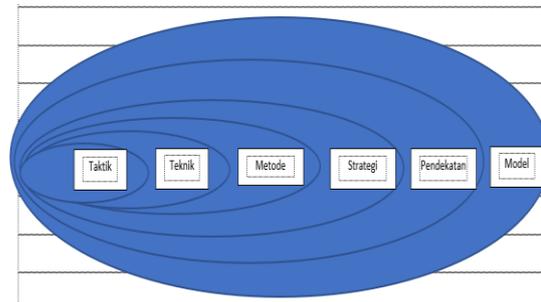


Figure 1 Venn diagram of the learning model.

2. METHODS

The implementation method in this workshop is the lecture method. The lecture method is a method that introduces and explains effective and innovative and fun learning models according to the indicators and objectives of a lesson. This method is believed to be able to provide new understandings to teachers.

In implementing PKM, the things that have to do are making joint preparations with all PKM members and coordinating with the headmaster at SMK Ketintang Surabaya, preparing files in the form of permits related to place and time, preparing materials to be delivered, making activity frameworks, preparing links used for workshops. The PKM activity in the form of a workshop was held for 4 hours on September 18, 2021, and was attended by 30 teachers at SMK Ketintang Surabaya. Workshop activities are carried out virtually by using the Zoom application.

3. RESULTS AND DISCUSSION

Innovative learning is a form of an idea or a technique that is considered new to be able to provide progress in the process and learning outcomes to students. Innovative learning methods can be done by measuring the ability to absorb knowledge from each student. If the student has got this method in mind, the passive students in the class will be less and less [17] [18] [7]. Innovative learning can produce a balance in right and left brain functions if the learning process uses technology-based media and can build self-confidence in students [18] [19]. By providing innovative learning, students are expected to be skilled in critical thinking when solving a problem. More information obtained by students can be developed and analyzed to answer questions properly [18] [7].

Sartono Wahyuari argues that the characteristics of innovative learning can be divided into 5 aspects, there are: (1) have a systematic learning procedure in modifying student behavior; (2) specifically defined learning outcomes can have an impact on changing student behavior; (3) conducive environment; (4) measure of student success after carrying out the learning

process; (5) interactions that can encourage students to behave actively in their environment [20].

There are variants of innovative learning models and the number reaches 106 variants including contextual learning, cooperative learning, problem-based learning, and others. As time goes by, new learning model appears. In this PKM, the various new innovative learning models are described in Table 1.

Table 1 New innovative learning model variants.

No	Learning Model Variants
1	Do Talk Record
2	Direct Instruction, Collaborative Learning, and E-Learning
3	Investigation Based Multiple Representation
4	Problem Based Learning with Argumentation
5	Collaborative Problem Based Physics Learning
6	The problem, Orientation, Observation, Explanation, Elaboration, and Write

According to I Made Mariawan, the learning model does talk record (DTR) is based on the theory of constructivism. This theory has a considerable influence on innovation efforts in science learning to help students construct concepts correctly. The constructivism learning model itself shows that students construct concepts based on existing concepts with their cognitive structures [21]. Constructivism theory consists of two forms, namely individual or cognitive and social. In this learning model, it is more directed to cognition that uses information processing theory when learning such as thinking activities to solve a problem.

The relationship between constructivism theory and the do talk record learning model is that constructivism supports the syntax in the do talk record model. Organizing the student learning experience by providing space for students to carry out activities related to thinking, observing, understanding, doing, and finding solutions to individual problems. As explained earlier that constructivism theory supports the syntax of the dotal record model, the syntax in this model is done, talk, and record. The main purpose of the do talk record learning model is to improve the ability to solve a problem. The specific purpose of the do syntax is to enable students to identify, relate, define, and apply concepts to solve a problem. The specific goal in the talk syntax is that students can express their ideas or ideas related to the definition, identification, linkage, and application of concepts when solving a problem. The specific goal in record syntax is that students can make decisions and reflect on the results of the do and talk syntax and then do documentation in the form of notes.



Figure 2 DTR learning model syntax.

The direct instruction, collaborative learning, and e-learning learning model or commonly known as DICEL is a learning model that has three elements, namely direct instruction or direct learning, collaborative learning or collaborative learning, and e-learning or electronic learning. Direct instruction is specifically designed to support student learning processes related to declarative knowledge and procedural and structured knowledge in a gradual pattern of activities. This learning model is focused and structured by the teacher [22]. This learning model can also be called an explicit instruction model. Explicit instruction can be formed with four aspects, namely lectures, demonstrations, training, and group work. Direct instruction has a syntax that aims to convey learning objectives and prepare students, demonstrate skills and knowledge, conduct training guidance, evaluate abilities and provide feedback, and provide opportunities for ongoing training. The main goal is to maximize study time, develop independence, create excellent students, and realize educational goals. In the book collaborative learning techniques, Elizabeth in 2014 stated that collaboration means working together with other people [23].

Collaborative learning practice means working in pairs in small or large groups to achieve shared learning goals. Collaborative means, not activities carried out with individuals. Mac. Gregor states that collaborative learning is based on four assumptions, namely: active and constructive learning, context-dependent learning, social learning, and students from various backgrounds [24]. E-learning is learning that utilizes electronic devices such as computers and the internet in delivering learning materials, interactions, or even guidance [25]. In 1963, Pavlik researched in the United States on the use of technology in learning and the results had a positive impact. The syntax in the e-learning learning model is that the teacher prepares learning materials, students prepare tools to support the learning process, students look for other sources of material, students can discuss through electronic media, teachers supervise student activities, students do individual evaluations, and students together with the teacher draws conclusions from the learning outcomes.

The Investigation Based Multiple Representation Learning Model or abbreviated as IBMR is implemented to improve students' representation and problem-solving abilities, especially in the field of physics. IBMR has an orientation, investigation, multi-representation, application, and evaluation syntax. Orientation means that the student's orientation to the phenomenon and use of multiple representations. This means presenting examples of physical phenomena, guiding students in

identifying the physics concepts in the presented phenomena. Investigation means designing and carrying out scientific investigations such as providing information about the need for investigations and guiding students to design and carry out investigations to test the concepts that have been made. Multi-representation means presenting the concept of physics with mathematics, graphics, pictures, and verbal. This means that the teacher guides students in analyzing the investigation in testing the concepts that have been made previously. Application means applying multiple representations of physics concepts in solving physics problems. Evaluation means that the teacher guides evaluating the results of solving a problem.

The PBLA (Problem Based Learning with Argumentation) learning model is a learning model that combines critical thinking patterns and argumentation skills. McGhee in 2015 concluded that: (1) the application of PBLA can increase the effectiveness of students' arguments as long as PBL is applied; (2) the application of PBLA can facilitate students in developing problem-solving skills and influence student learning motivation, and (3) argumentation becomes an effective instructional strategy to develop problem-solving skills. The characteristics of PBLA are (1) learning is carried out by paying attention to students' prior knowledge. The teacher asks or gives an overview to the students of the previous learning material. The teacher provides an experience as needed if students do not have sufficient prior knowledge; (2) integrate learning with situations that are often experienced by students in everyday life. This is done by providing tasks and problems related to the application of science in everyday life; (3) learning begins with the identification of problems posed by the teacher. The problem posed can be a problem that has an unclear structure; (4) Claims for answers given to problems must be prepared through TAP which is based on evidence in the form of data obtained and accompanied by justification through a process of scientific reasoning. This is where students are trained to improve critical thinking skills to the maximum; (5) students are facilitated and encouraged to interact with other students when constructing answer recognition and answering problems; (6) answers to problems that have been compiled by students must be evaluated and validated through discussion activities; (7) discussion activities are carried out by involving social activities through dialogue activities, collaborative group discussions, students are involved in asking questions, preparing evidence to support confessions to build arguments and explanations as well as proposing, criticizing, and evaluating ideas among students.

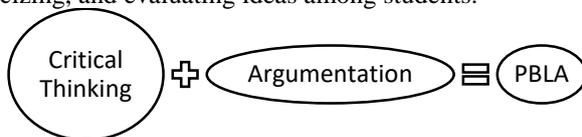


Figure 3 Learning model of PBLA.

The CPBL (Collaborative Problem Based Physics Learning) learning model refers to the flow of the problem-solving process from John Dewey in 1910 [26]. In his book Democracy and Education, Dewey describes a view of education in which schools are mirrors of the larger society and the classroom becomes a laboratory for investigation and alleviation of real-life problems. [27]. According to Moreno 2010, John Dewey defines problem-solving as a deliberate process consisting of the following steps: (1) understand the problem at hand; (2) identify the nature of the problem; (3) develop hypotheses to solve problems; (4) test different hypotheses; (5) choose the most appropriate alternative between the existing hypotheses [28]. The main goal of CPBL is to improve science process skills, collaborative problem solving, and increase student confidence. According to Dahar, science process skills are the ability of students to apply the scientific method when understanding, developing and discovering knowledge [29]. According to Rustaman, process skills include skills to make observations, classify, interpret observations, predict, ask questions, hypothesize, plan experiments or investigations, use tools and materials, apply concepts or principles, communicate [30]. Collaborative problem-solving skills are a person's capacity to effectively engage in cognitive and social processes with others in solving problems that students face [31]. Indicators of collaborative problem-solving skills are participation, sharing views, social regulation, learning and knowledge building, and task regulation. CPBL has a syntax that includes motivation, collaborative problem-solving activities, presenting, non-routine problem solving, evaluation.

Learning model PO2E2W (Problem, Orientation, Observation, Explanation, Elaboration, and Write) is a learning model based on innovative and student-centered problem solving where participants become more active. The purpose of this learning model is that students can solve problems in groups or individually. Increase interest and motivation to learn for students to be more active. PO2E2W learning syntax is problem orientation, observation, explanation, elaboration, and writing. Problem orientation means that students are given real material in the form of pictures or videos that lead to understanding concepts. Observation means that students make observations through various relevant literature on problem-solving in case studies. Explanation means that students carry out practical work using simulations in groups to apply previous concepts. Elaboration means that after doing the explanation, the student has a discussion with a group of friends to explain briefly to other friends in the class. Write means that students write conclusions and make reports on practicum activities that have been carried out.

At the time of the implementation of PKM activities in the form of continuous professional development workshops to support the professional development of learning teachers to run smoothly. In the implementation

stage, the teacher has explained the learning model with the aim of the teacher being able to know and understand the innovative learning models and media as described in the previous paragraph. After the explanation of the learning model and innovative media, media was completed, it was continued with a question and answer session and joint discussion conducted by the teachers and presenters to deepen the information obtained. For more details, this PKM activity is carried out in stages which can be seen in table 2.

Table 2 Data result of light intensity.

No	Steps	Activity Details
1	Preparation	Conduct a survey to SMK Ketintang Surabaya
		Doing PKM licensing with the headmaster
		Complete administrative processes
		Preparing media for training
2	Training	Opening by the principal of SMK Ketintang Surabaya
		Provision of Learning Model Materials and Innovative Media
		Process of Questions and Answers and Discussion of Participants with Presenters
No	Steps	Activity Details
3	Closing	Share the material file that has been explained
		Participants carry out activities to fill out a questionnaire
		Say goodbye to the participants

Figure 4 shows the attendance of the PKM training participants and presenters. This training utilizes zoom software to support the process of providing model material and innovative learning media. Zoom is the platform chosen because this software can provide video and image results with HD (High Definition) quality.

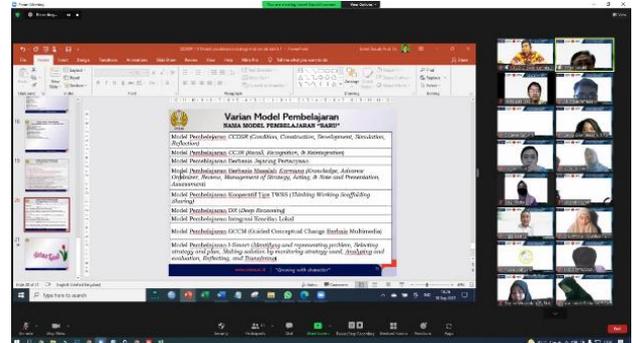


Figure 5 Ongoing training process.

The PKM training was attended by 30 teachers from SMK Ketintang Surabaya. After conducting the training, participants filled out the questionnaire given to respond to the training that had been carried out. The results of the questionnaire can be seen in table 3.

Table 3 Questionnaire.

No.	Questions	Score
1	Does it benefit the participants?	4,8 (High)
2	Is the material being taught interesting enough?	4.5 (High)
3	Do you agree to do further PKM?	4.7 (High)
4	Is the PKM time given enough?	4.1 (High)

The questionnaire results obtained in table 3 show high scores in almost all the questions given. So this indicates that the participants or teachers of SMK Ketintang Surabaya are very satisfied with this PKM activity. The implementation of this PKM has been following what was planned for educators at SMK Ketintang Surabaya. Based on the evaluation that has been done, the teachers of SMK Ketintang feel very helpful with this training. The presenters who were present to explain innovative learning models and media had a very good experience so that participants felt that they could easily understand the material presented.

Each teacher has a different quality of learning, there are teachers who can have good performance in the sense that the teacher can direct students to have good abilities but also cannot be separated that there are also teachers who have poor performance. Therefore, this PKM activity is intended so that teachers can develop



Figure 4 Training participants.

sustainable professions with new innovative learning models and media.

4. CONCLUSION

Based on the PKM implementation that has been carried out, it can be concluded that this activity is able to improve the performance of educators in implementing innovative learning models and media. This also enables teachers to foster a positive understanding of the importance of innovative learning models and media in carrying out the learning process together with students. Therefore, this can encourage teachers to improve the quality of teaching in the classroom to be better and more innovative. From the results of the questionnaire obtained, the high score of the questionnaire indicates that the teachers of SMK Ketintang Surabaya feel very helped by this training activity and the teachers feel that this training activity needs to be carried out further training activities. However, this activity is also not free from obstacles such as network connections that become unstable at times.

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