# ANALYSIS OF THE EFFECTIVENESS OF THE IMPLEMENTATION OF *FLIPPED CLASSROOM* LEARNING MODEL IN SCIENCE LEARNING AT SCHOOL

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## ABSTRACT

*The flipped classroom-based learning model is one of the student-centered learning models to improve learning effectiveness. This learning model reverses student learning time, which usually students come to school to gain knowledge, then it is reversed to be done at home so that time at school is used effectively to discuss material that is not clear and still needs further explanation with students who have previously been equipped with learning material that is the subject of discussion. In this study, the author uses a descriptive qualitative research method that is literature study with secondary data as a source of information to analyze how the application of the flipped classroom learning model in science learning at school and whether this method is able to make the teaching and learning process much more effective and efficient.*

*Keywords: effectiveness; learning model; flipped classroom*

## INTRODUCTION

The increasingly modern era is characterized by advances in various fields of life, especially in the field of technology, information and communication (ICT). Technology is created and developed with the aim of building a more advanced civilization than before. In addition, the development of technology also aims to facilitate human life.

The same thing happens in the world of education. Along with the rapid development of technology, learning media is also developing. This results in the teacher not being the only source of learning in learning activities. Nowadays, students can get information from various media and learning sources, be it from magazines, modules, learning radio broadcasts, learning television, computer media or what we often know as computer-based learning (CBI), *games* or the internet.

Now or in the future, the role of the teacher is not only as a *transmitter*, but he must begin to act as a *director of learning,* namely as a learning manager who facilitates student learning activities through the utilization and optimization of various learning resources. In fact, it is not impossible that in the future the media will become the main *transmitter* or source of information in learning activities and override the role of the teacher so that the teacher is only a learning facilitator. Therefore, by utilizing existing technological developments teachers are required to be able to apply active, innovative, creative and effective learning models in the learning process.

Nurdyansyah and Fahyuni (2016) state that a learning model is a plan or pattern used by teachers in planning learning, designing learning materials, and guiding learning to achieve learning objectives. Based on literature review, one of the effective learning models used in K-13 learning is the *flipped classroom*

learning model. Where K-13 prioritizes the development of knowledge, attitudes and skills abilities simultaneously. (Fadillah, 2014)

*Flipped Classroom-based* learning model is one of the student-centered learning models to improve learning effectiveness. This is clearly different from the previous teacher-centered learning model in the learning process. The strategy of *flipped classroom* learning model is to utilize technology to provide additional learning materials for students that can be accessed *online* or *offline*, anytime and anywhere. In-class learning time is used by students to collaborate with project peers, practice skills, and receive feedback on their progress. (Nurdyansyah & Fahyuni, 2016)

Bergmann and Sams (2007) explain *Flipped Classroom* as *"what is traditionally done in class is now done at home, and that which is traditionally done in class is now done at home"*. It can be concluded that the *Flipped Classroom* learning method is a method that reverses the way material is delivered, namely before the day of face-to-face between teachers and students through a certain media that has been determined by the teacher. This results in, on the day of the face-to-face meeting, students already have prior knowledge about the material that will be discussed with the teacher. And when in class, the teacher no longer explains the material because all the material has been studied at home by students. In this learning model, the teacher's role is only as a mediator and evaluator in the learning process.

Based on the explanation above, the researcher will analyze the effectiveness of the use of learning models in order to realize an active, innovative, creative, effective and efficient learning process in science learning at school.

## METHODS

This research is descriptive research with qualitative analysis in the nature of a literature study (*library research*) where researchers do not go directly to the field to collect data but use literature studies in the form of books, print media, online media and other literature as the main object of research.

The reason the author uses a qualitative descriptive method is because the method is very suitable for the research to be carried out by the author, namely the analysis of the effectiveness of learning using the *flipped classroom* model, which is expected to use the descriptive method to obtain a real picture of the results of the application of the *flipped classroom learning* model in science learning at school.

The type of data in this research is secondary data. Secondary data sources are obtained through literature studies from books, print media, previous research journals, and information on the internet that is relevant to the theme the author chooses.

The data collection method is carried out by collecting data and the results of previous research in the form of relevant literature data and has been selected, searched, presented, processed, analyzed and then compiled in the form of a literature research report. In data processing, the data that the author has collected undergoes a reduction process, where data whose themes and patterns are less

important are discarded by the author, so that the final data can provide a clearer picture of the research conducted by the author.

**RESULT & DISCUSSION**

From the literature research that has been conducted by the author, the author writes down the research data that has undergone data processing in the following table:

**Table 1**. Observation Results

| No. | Indicator | Results | Capability Achievement |
|---|---|---|---|
| 1. | Learning Motivation | *Flipped Class-based* problem-based learning model with learning motivation can optimize student learning achievement | Affective |
| 2. | Attitude of Curiosity | The learning method using the *Flipped Classroom* learning model successfully develops students' curiosity. | Affective |
| 3. | Confident Attitude | *The Flipped Classroom* learning model affects students' confidence level when face-to-face learning is held. | Affective |
| 4. | Concept Mastery | *The Flipped Classroom* model is effectively used to improve concept mastery | Cognitive |
| 5. | Learning Outcomes | *The Flipped Classroom* learning model affects the value of student learning outcomes | Cognitive |

The results of research from Yanah, et al (2018) state that, the Flipped Classroom learning model can improve students' concept mastery abilities because the learning process is student-centered learning by minimizing the amount of direct instruction and maximizing interaction between students and other students or between students and teachers.

The number of interactions in this class can trigger student involvement to participate in learning activities in the classroom. Indirectly it makes passive students active, where students are directly involved in learning activities to build their knowledge independently and confidently express their opinions.

This is in line with research conducted by Pratiwi, et al (2017), that learning using the *flipped classroom* model can increase a student's confidence when face-to-face learning takes place. Students study learning materials at home before face-to-face in class, so that students know the concepts first and during class meetings are more focused on discussing the material briefly and asking questions/discussing material that students still do not understand. In this way, students become more familiar with the material to be discussed and students become more confident. Students with high *self-confidence* have a positive belief in their ability to do learning. In the learning process, students with high self-confidence will complete the tasks given as optimally as possible and be more active than students with low *self-confidence*.

Research conducted by Sinmas, et al (2019) shows that there are differences in learning achievement between students who learn through *flipped class-based learning* models and students who learn through conventional learning models. Where students who learn with this learning method have high learning motivation compared to students who are taught using conventional methods that show low levels of learning motivation. The interaction between problem-based *learning* model *based on flipped classroom* and learning motivation on students' learning achievement shows that experimental group students, who are taught using *flipped classroom* learning method, have high learning motivation so that this also encourages their achievement in learning.

The implementation of Flipped Classroom learning is generally followed by the development of learning media that can support the implementation of learning. For example, the teacher first provides a learning video containing learning material that students must study at home. Then in the next meeting, activities carried out in the classroom are in the form of discussions and questions and answers about the material contained in the learning video given earlier.

From the results of classroom action research conducted by Joko (2020), learning activities using the *flipped classroom* model greatly support the improvement of students' curiosity attitude. This is evidenced by the active question and answer discussion process. When a student was presenting the results of collaborative and cooperative learning, the student was able to provide a broader explanation with additional supporting theories as well as examples and applications obtained from various reference sources so that other students who listened, listened carefully and paid attention to the presentation became very enthusiastic to ask questions with the aim of getting more information and to find answers to their curiosity.

In addition, research conducted by Maolidah, et al (2017) shows that the application of the *flipped classroom* learning model makes students able to provide simple explanations (elementary clarification) consisting of focusing questions (identifying and formulating questions), analyzing arguments (identifying the reasons put forward), asking and answering about an explanation or challenge (why is that).

**CONCLUSION**

Based on the research data above, the application of the *flipped classroom* learning model is a learning model that is in accordance with the K-13 curriculum which is able to improve affective abilities such as self-confidence from students during face-to-face learning. And this affects student motivation and mastery of student concepts (cognitive) of the material being studied. The higher the level of self-confidence, the higher the level of student learning motivation and is able to improve student achievement results.

*The flipped classroom* method is actually not a new thing in education. By utilizing existing technological developments, the *flipped classroom* learning model can be very interesting to implement. But much more important than that is to answer the challenge of how this method can make the teaching and learning process much more effective and efficient.

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