Students’ perception toward flipped classroom learning

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Abstract. Development of technology encourages educational sector to adapt. Flipped Classroom provides an approach of learning that integrate learning process with technology. Flipped classroom is a model of learning in which the process of learning in classroom is inverted, so that students are given the learning material before class, then students' understanding of the material is deepen in the classroom session through discussion facilitated by teachers. Thus, this article discuss about students’ perception toward flipped classroom learning. In order to know students’ perception, it is important to conduct a flipped classroom learning followed by semi structured interview and questionnaire. The semi structured interview and questionnaire are given to students of SMA Pembangunan Kota Padang. The findings show that students are interested to this approach. It is happen because students can learn the material whenever and wherever they want.

1. Introduction

The development of technology in the present has touched all element of society. An example is the development of mobile phones. At present, almost all students in the school have mobile phones. Students use it to communicate with parents, friends or access information via the internet. Of course this can provide positive effect if they use the phone in a meaningful way, and it can also be negative if they use the mobile phones technology in a way that not suit their age or their need.

To anticipate the negative effect and exploit the positive effect, teachers in school need to encourage their students to use mobile phone in a positive, as an alternative is using mobile phones as media for learning. Considering this idea, a model of learning that use phones as media is flipped classroom. Flipped classroom model reverses the space of learning in which instructional materials are given to students outside classroom instead of inside the classroom. This is a process of learning which uses technology in ways that allow students access instructional material wherever and whenever they want. Meanwhile, lessons in the classroom can be used to process assignments or projects. These activities can be used for improving student creativity in the classroom because they already learn the material before classroom learning started. Baker and Mentch as in [1] illustrate the scheme of classroom flip,
There is a question among teachers whether flipped classroom can be implemented in class and really makes students study actively or just make a conflict in learning. To this question, Seery M gives opinion that flipped learning is in line with the concept of constructivism approach as it is an approach that facilitates active learning environment where students are able to build new ideas [2].

Lage et al. defines flipped classroom as a situation where things are usually done interacting in the classroom, outside the classroom and vice versa. Flipped classroom maximizes interaction within the classroom between students and teachers. This condition allows students to solve problems related to the material [3].

The thing that becomes the capital in flipped classroom is videos. The selection of video is because students are lazy to read books, and they tend to be interested in new things. In learning-based reversing classes, learning material can be accessed by students through video, a new thing of learning. Firstly, teacher delivers the videos to students before learning in class. Secondly, teacher requests feedback from students during the learning process in class activity. Bergman and Sams said that by providing learning videos to each student, they will be able to study at home. It gives students more time to understand the material. Students are given the responsibility to manage their time to study [4]. Moreover, Kim et al. gave opinion that through delivering the videos, students feel more confident and more determined to discuss the material in class [5]. Then, students can temporarily cancel or watch videos whenever students want, students be able to provide information about the video they have watched.

Teachers do not need to stand in front of students for a long time and talk for 30-60 minutes. Flipped classroom can be used to discuss difficult things, discuss, and work on problems. When outside the classroom, students individually collaborate with their friends to understand the material with the help of videos. [4].

In flipped classroom there are two techniques in learning, namely, the interaction of group in the classroom and using computers or phones individually outside the class. Students read material, listen to learning videos before entering class and start discussing, exchanging knowledge, solving problems, with the help of friends and teachers.

Yet, it is inevitable that every students perhaps give differs responses to the video based on their perception towards the video given and of course this affects how students retelling the information in the video to other. Considering the issue, this study attempts to discover students’ perception toward flipped classroom.

2. Method

2.1. Design of Research
This study used triangulation of the data collection. This study was a case study that focuses on grade X students. To ascertain the validity of the result gained, this study used two different techniques of data collection.

2.2. Site and Participants
This study was conducted at SMA Pembangunan Laboratorium UNP, Padang, West Sumatra, Indonesia. Students of grade X, class X IIS 4 are the subject.

2.3. Data Collection Technique
Semi-structured interview and questionnaire were done to reveal students’ perception toward flipped classroom learning.

2.4. Data Analysis
The collected data were then analyzed in a qualitative method that involves analyzing, synthesizing, and reducing the information that were not necessary [6].

3. Result and Discussion
In this research, learning using flipped learning model was carried out to deliver the topic of equation and inequality of absolute value. There were 4 times meetings. The first meeting discussed understanding of the concept of absolute value. The second discussed equation of absolute value equation and the graph. Third, the topic was about inequality of absolute value. The last meeting was solving contextual problems related to absolute value.

At the end of the last meeting, three students namely a high-mathematical ability, a moderate-mathematical ability and a low-mathematical ability student were interviewed to find out their responses and perception towards flipped learning. Then, to ensure level of significance of the interview data, all students were given a questionnaire to find out their responses and perception towards flipped learning and video used.

Questionnaire data were analyzed by interpreting the percentage of answers given by students, while the interview data were reduced and synthesized to gain information which was in accordance with the focus of this study. Then the results of questionnaire and interview were compared and analyzed qualitatively to ascertain whether the data obtained had a high level of truth and represent the actual situation.

Dimensions assessed to reveal students’ perception toward flipped learning are attractiveness, process of use the video, ease of use the video, and time to watch the media. Each of these dimensions are then elaborated in several statements addressed to the students. It is presented in the Table 1 below:

| No. | Dimensions                  | Statements                                                                 |
|-----|-----------------------------|----------------------------------------------------------------------------|
| 1   | Attractiveness             | • Interesting learning videos to watch                                     |
|     |                             | • The videos provide learning material that well understood               |
|     |                             | • The material presented in the learning video are the material being studied at class |
| 2   | Process of use the videos  | • Learning videos help me understand the learning material                |
|     |                             | • The learning videos direct me to find the concept of learning material   |
|     |                             | • Learning videos help me explore ideas that will be discussed in class   |
|     |                             | • The exercises contained in the learning videos can help me to measure my mathematical ability to the learning material |
• Understanding the material from the learning video is able to make me active while studying in class

3 Ease of use the videos
• Easy learning videos to watch on my handphone, laptop or computer
• Learning videos are easily played back so that helps me understand the learning material

4 Time
• The duration of the learning video does not make me bored to watch

The result of questionnaire are presented in Table 2.

| No | Dimensions | % of Students’ agreement |
|----|------------|-------------------------|
| 1  | Attractiveness | 81% |
|    | Interesting learning videos to watch | 79% |
|    | The videos provide learning material that well understood | 81% |
|    | The material presented in the learning video are the material being studied at class | 83% |
| 2  | Process of use | 76% |
|    | Learning videos help me understand the learning material | 75% |
|    | The learning videos direct me to find the concept of learning material | 79% |
|    | Learning videos help me explore ideas that will be discussed in class | 76% |
|    | The exercises contained in the learning videos can help me to measure my mathematical ability to the learning material | 76% |
|    | Understanding the material from the learning video is able to make me active while studying in class | 74% |
| 3  | Ease of use | 81% |
|    | Easy learning videos to watch on my handphone, laptop or computer | 79% |
|    | Learning videos are easily played back so that helps me understand the learning material | 83% |
| 4  | Time | 79% |
|    | The duration of the learning video does not make me bored to watch | 79% |

Based on the data given in Table 2, it is clear that students agreement to the statements are at high level. All are greater than 50%. It means that learning videos are attractive, helpful to study the material, easy to use, interesting and not boring. This result is in line with the interview result as shown below,

Extract 1 of interview result
9. T : when you first watched the video, what’s come in your mind, was it interesting or else?
10. S : interesting Maam. Teacher in the video explained the material one by one so I understood.
5. Extract 2 of interview result
45. T : when S first watched the video, were S interested in seeing the video?
46. S : initially it wasn’t interesting, but after having seen further and understood what was explained, I was interested Maam.

Extract 3 of interview result
57. T : the first time you saw the video. Do you think that it was interesting video?
58. S : yes Maam, I was curious.

Learning videos also match the criteria of ease of use, with overall percentage in this criteria is 81%. It is easy learning videos to watch on students’ handphone, laptop or computer. Students can easily play back the video if there is a topic that is not yet understood. It is helpful for students. They can make notes whenever they want as revealed in the following interview result,

Extract 4 of interview result
13. T : when you watched the video, was there no skype playing back or pause?
14. S : play back Maam. If I forgot and then look at the video again, tried again.

Extract 5 of interview result
41. T : did you take notes while watching this video?
42. S : ya Maam. There was a part that I did not understand, I would note it and asked to the teacher in class. I also repeated the play to understand what had been explained.

Extract 5 of interview result
62. T : A: if there were parts of the video that were less understandable. What would you do with the video?
63. S : repeated to see the video Maam.
64. T : How often did you make notes when viewing a video?
65. S : sometimes Maam, when I did not understand a part and play back again.

In the dimension of process of use. Flipped learning by using videos as media reach 76% students’ perception that state learning videos help them understand the learning material, direct the students to find the concept of learning material, help students explore ideas that will be discussed in class. Students study actively in discussion session because they already have learnt the material before attending the class. Learning videos also help students to explore ideas and to measure their mathematical ability. It gives positive effect to students’ achievement as also experienced by Kong, S. C. his research shows that through flipped classroom students can understand the material and get high scores during the exam [7]. The results of Galway et.al’ study indicate that student test scores increase by applying flipped classroom and students can prepare materials before coming to class [8].

In terms of time watching videos, the duration of learning video does not make students bored to watch. Students can create their own strategies to manage the time to study and reflect on what they have just done. Further, Chiu-Lin Lai, Gwo-Jen Hwang shows that integrating self-regulating strategies into flipped learning can improve students’ self-efficacy and their strategies in planning and using learning time, and therefore they can learn effectively and have better learning achievements [9].

4. Conclusion
Based on the purpose of this research and the result, students’ perception towards flipped learning are:
- Flipped learning that use videos as its media is interesting. The videos are easy to use and not boring
- Flipped learning helps students to prepare for learning in class
- Flipped learning provides spaces for students to manage their own time
- Flipped learning encourages students to explore ideas
- Learning videos helps students to measure their own mathematical ability, because they can play it back when there is a part that hard to be understood.

5. References

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