DOES FLIPPED CLASSROOM WORK IN INDONESIAN SCHOOLS?
POTENTIAL AND ITS CHALLENGES

Teddy Trilaksono\textsuperscript{a,f}, Sasmoko\textsuperscript{b,f*}, Arnold Tindas\textsuperscript{c,f},
Rina Kartika\textsuperscript{d,f}, Jarot S Suroso \textsuperscript{e,f}
\textsuperscript{a}Universitas Prasetiya Mulya, School of Business and Economics,
BSD City Kavling Edutown I.1 Jl BSD Raya Utama, Tangerang 15339, Indonesia
\textsuperscript{b}Universitas Bina Nusantara, Faculty of Humaniora,
Kampus Syahdan, Jl. K.H. Syahdan No. 9, Palmerah,
Jakarta Barat 11480, Indonesia
\textsuperscript{c}STTI Harvest, Doctorate Program,
World Harvest Center, JL. Gunung Rinjani no. 6,
Lippo Karawaci, Tangerang 15811
\textsuperscript{d}Universitas Bina Nusantara, Department of Visual Communication Design,
Kampus Syahdan, Jl. K.H. Syahdan No. 9,
Palmerah, Jakarta Barat 11480, Indonesia
\textsuperscript{e}Universitas Bina Nusantara, Magister Management Program,
Kampus Syahdan, Jl. K.H. Syahdan No. 9,
Palmerah, Jakarta Barat 11480, Indonesia
\textsuperscript{f}Research Interest Group in Education Technology,
Universitas Bina Nusantara, Indonesia
Corresponding author Email:* E-mail: sasmoko@binus.edu

March 26, 2018

Abstract

1
The flipped classroom also known as reverse teaching was still considered a new teaching method in the Indonesian context. This method is known as an innovative pedagogical approach that teachers and students have more efficient and quality time to meet face to face, at the same time allow more flexibility to students using their time for learning outside of wall classroom. However to make it works, the teachers need to determine the types of learning activities that need to be flipped. Many potential along with challenges if the flipped classroom will be used in Indonesian schools. Our paper aims to provide synthesis of knowledge and applicability of flipped classroom methods in Indonesian schools from theoretical views and research trends. This paper used a qualitative approach as a methodology such as focus group discussion with school stakeholders, interview with policy makers, and integrative reviews with multiple academic database was gathered, ranging in scope, including Elsevier, Ebsco, Scopus, web of science and google scholar. The paper ends with a hypothetical model conceptualizing the flipped classroom in Indonesian school context. Implications of flipped classroom in Indonesia education will be examined in this paper with stakeholder and policy perspective.

**Key Words:** Flipped Classroom, Integrative Review, Modern Instruction, Indonesian School

1 Introduction

The flipped classroom also known as reverse teaching was still considered a new teaching method in the Indonesian context. Bergmann & Sams\(^1\) simply define this teaching method as (1) the professors lecture is delivered at home and (2) the students homework is done in class. Traditional learning method only focuses on textbooks and lecturer talks, results in low student engagement to learning activities.\(^2\)–\(^3\) Students eventually become boredom, restlessness and behave disruptive.\(^4\) In addition, this method also focuses on the teacher as the center of knowledge, as Wang & Heffernan\(^5\) mentioned that it is not relevant in today’s digital age.

This is very different from the flipped classroom approach that uses various technology media in every teaching and learning ac-
tivity in the class or at home\(^6\) such as online video lectures from pre-recorded videos, youtube or other education sites.\(^7\) Students can access this free content everywhere and at their convenience\(^8\) and at the same time interact with their friends and teachers.\(^9\) Through this method, teachers and students have more efficient and quality time to meet face to face, at the same time allow more flexibility to students using their time for learning outside of wall classroom. As McLaughlin et al.\(^{10}\) and Hung\(^{11}\) states that students had more opportunities to have the dialogue with their friends both inside and outside the class, and this helped them learn from other students. Moreover, the teachers will help students to collaborate with each other to solve problems\(^{12}\) and exchange ideas\(^13\) to create a student-centered learning environment. Thus, knowledge is actively constructed by students - their own learning - not something that is forced on the students.\(^{14}\)

However to make the flipped classroom works, the teachers need to determine the types of learning activities that need to be flipped according to the level of the bloom taxonomy for cognitive domain.\(^5\) As for the lowest levels of cognitive domain, “remembering and understanding” are practiced outside the class hour such as listening to lectures and other lower-level thinking tasks.\(^{16}\) While on higher level of the taxonomy domain, “applying, analyzing, evaluating, and creating” are spent in classroom activities.\(^{17–18}\) Classroom activities can be used for activities related to the application of concepts, discussions, exercises for problem solving. Outside the class, students will learn course material by watching videos or by reading e-books, or do quizzes afterwards, so they are more confident and active in the class as reported by Talley and Scherer.\(^{19}\)

Many potential along with challenges if the flipped classroom will be used in Indonesian schools. Many studies on the flipped classroom method in some countries mentioned that many students had difficulty adapting this method. These studies mentioned about the lack of time for student to watch the video lesson outside the class.\(^{20}\) There are also problems such as poor quality of video and difficulty to access computers and internet.\(^{21}\) This method also involving a careful planning and informed implementation from teacher that will add extra workload and skills, especially related to digital technologies.\(^{20,22}\) These challenges would be faced by Indonesian schools which apply this method.

3
Therefore this paper aims to provide synthesis of knowledge and applicability of flipped classroom methods in Indonesian schools from theoretical views and research trends. More specifically, we ask the following research questions: (1) Does flipped classroom works in Indonesian School? (2) What are the pros and cons if this method is applied in Indonesian School? (3) What policies should be built by schools and policy makers if this method should be applied?

2 RESEARCH METHODS

This paper used a qualitative approach as a methodology such as focus group discussion with school stakeholders, interview with policy makers, and study literature reviews with multiple academic database was gathered, ranging in scope, including Elsevier, Ebsco, Scopus, web of science and google scholar.

First phase, focus group discussion (FGD) activity focuses on in-depth interview respondents with open-ended questions designed to capture their in-depth experiences, perceptions, opinions, feelings and knowledge that related to flipped classroom method. Through this FGD, researchers will acquire data with interviews on many respondents with a slight time. FGD are conducted with Indonesian school stakeholders such as principals, teachers, parents, and students.

Secondly, interviews with policy makers are conducted with a semi-structured interviews and document analysis approach. Semi-structured interviews are chosen because researchers can explore the topics of their responses. Respondent interviews are selected staffs in the Ministry of Education and Culture, Republic of Indonesia and the Center of Policy and Education Studies in Indonesia.

Documentary secondary data is used to enrich the insights given by participants. The way to measure dependability and credibility of data in this qualitative study through: (1) consistency of responses to multiple coders of data sets and (2) the existence of evidence that findings can be trusted or believed by the participants of the study. Therefore the participants of the FGD and interviews approach would ask to verify or comment regarding the transcriptions.
Final phase, integrative review is conducted by running literature study through selecting journals from multiple academic databases such as Elsevier, Ebsco, Scopus, web of science and google scholar from 2012 to 2017 which covers Flipped Classroom investigation in Indonesia either qualitative or quantitative.

3 RESULTS

The researchers found through the FGD that, flipped classroom can be used in Indonesia with various preparations required. One respondent stated:

“This method can be implemented in Indonesian schools, if there is an sufficient prior knowledge of the teacher, a clear learning protocol, and the independence of the students. If this does not exist then, this method becomes chaotic”

According to Moran and Young to flip effectively, students need an explicit instruction with stages that are easily understood by them, as well as its expected outcomes. Teachers must also have a careful preparation and strategies that can enhance student learning. Moreover, because this method emphasizes the autonomy and control over the learning environment by students, they must have their own responsibility for the acquisition of information as well as the outcomes of their learning. Students independence is also an important concern for the application of flipped classroom in Indonesia. As a respondent stated that:

“The need for a strong relationship between the schools and parents. Because students will learn the subject matter at home without supervision from the teacher, so the role of parents will be very dominant. Especially to avoid students from negative content when accessing learning resources”

This statement is positively associated with the results from policy makers interview. This method will succeed if there is discipline from students to learn the material at home.

“Flipped classroom will help teachers work in allocation teaching time. So teachers can strengthen or focused on the subject topic or skills in the classroom. But it can be applied if there is students discipline to learn teaching materials at home.”

Students access to technology and internet in Indonesia is also a
constraint if the flipped classroom is applied, as a respondent from the perspective of policy makers puts it:

"This method will be very difficult to implement throughout Indonesia, if students are still constrained to get access to the internet and technology. Not to mention the teachers capacity in Indonesia to have the tools, the time, and the ability to create learning videos".

As mentioned by, Mishra and Koehler31 besides pedagogical knowledge (PK), content knowledge (CK), and pedagogical content knowledge (PCK) to teach well,31 teachers should also have technology knowledge (TK). Therefore, teacher’s expertise on technology is needed to prepare teaching materials compared to conventional lecturers. Teachers must ensure videos are made with high quality, short and clear but with small file size.32

Although the video has good quality, students may not be able to access lecturers video due to limited internet network or weak in internet bandwidth. This problem can exacerbate a digital divided where students who have access to digital resources will be performing better than student that have less access, especially student from low-income districts.33 There are still many districts in Indonesia who have difficulty access to technology and internet. Demographic survey data of Indonesian internet users 2016, organized by the Association of Internet Service Providers Indonesia34, stated that the spread of internet users in Indonesia is still dominated by West Indonesia area (Java and Sumatera), while for East Indonesia area such as Maluku and Papua only 2.5%. Then the report from State of the Internet Report Q1 2016 by Akamai Technologies35 shows Indonesia is still ranked 94th for internet connection average speed in Asia Pacific with 4.5 Mbps record.

This access constraint creates the usage of this flipped classroom method can only be applied to several schools with adequate technology resources. As expressed by one of the respondents from the perspective of policy makers:

"Schools that are already available access technology and internet can be applied the flipped classroom method immediately. However if this method is implemented throughout Indonesian school - as an education policy obligation from Ministry of Education and Culture Republic Indonesia, it is impossible, even for the island of Java because there are still many schools in Indonesia are
constrained access to technology and the Internet.

In addition to infrastructure issues, the problem of changing teachers’ perspective on learning processes is also a crucial issue in the application of the flipped classroom method in Indonesia. The change of “student centered learning approach to” teacher centered learning requires a process that is not easy. The existence of a feeling of insecurity and fear of change, will affect teachers and they feel they will not get benefit from the change. For example, the addition of teachers responsibility and effort, such as videotaping and uploading edited lectures, which take time and skill make this method adds extra workload than traditional methods, which implemented a teacher centered learning approach.

Findings from FGD and interviews of policy makers are in line with the results of a literature study from several journals that contains flipped classroom research in Indonesia from 2012 to 2017. Researchers found that facilities constraints that support flipped classroom are not maximal, thus students only achieve the level of understanding of the concept of “remembering and understanding”, and mostly students following learning activities without knowing the material being taught. Then concern on self-discipline students, which will reflect on the students' deeper understanding and better performance during classroom activities. Students who have low learning independence with this method have an insignificant average achievement, because they will tend to be passive, no initiative to seek other references. The readiness of teachers and parents will be very important to ensure that students know the concept and procedure of the flipped classroom, especially when student online self learning at home and parents assistance and monitor the students' learning difficulties.

4 DISCUSSION AND CONCLUSION

Based on this research study, the flipped classroom is still an innovative pedagogical approach that improves student achievement, increases engagement among students or teachers and students and connects student in their own education. However, to apply in Indonesian school this method requires a variety of preparations, such as: (1) adequate technological infrastructure and internet ac-
cess in Indonesian schools and student family environments, (2) teacher capacity in technology knowledge, 3) student self-reliance and self-discipline, (4) clear learning protocols for students when conducted this method, and (5) parents’ readiness to assist and monitor students. Although point 1 until 5 has been fulfilled, we still needed changes in the learning process from the teacher’s perspective. Changes perspective from “teacher centered learning to student centered learning approach.

The flipped classroom model for Indonesian school should also be adjusted. The current flipped classroom model has been proposed by Wagner et al.41 with three main activities: (1) online lecture, (2) in-class activity, and (3) assignment completion. Suardika32 argued that this modeling missing a interconnectivity between classroom activity and the follow-up activity (at home) with the online lectures. The Indonesian school still follow the standardize test as a mandate from the ministry of education and culture, making teachers and students still required to spend their time to prepare the test, which is not aligned with the flipped classroom process. This research is limited to respondent’s perspective related to this flipped classroom method. Therefore it is necessary to conduct a full classroom observation and in-depth interviews to the school who have applied this method in Indonesia. Therefore, there is a need for further research based on the result of this study through experiment research method to construct the flipped classroom model that suitable for application in Indonesian school.

Acknowledgment: We gratefully acknowledge this support and the feedback from Ministry of Education and Culture, Republic of Indonesia and the Center of Policy and Education Studies in Indonesia who given the perspective of policy maker for this research. The authors also thanks to Yasinta Indrianti, Thomas Gunawan, Ifa H. Misbach, Irfan H. Prasetiya, and Iwan Syahril for their generous support and feedback.

References


8


[39] F. Yulietri, Mulyoto, and S. L. Agung, Model flipped classroom dan discovery learning pengaruhnya terhadap prestasi

