

# The influence of flipped model on learning achievement: an analyze of students school engagement

**Sri Sukasih**

Faculty of Education, Semarang State University, Semarang 50229 Indonesia  
[srisukasih@mail.unnes.ac.id](mailto:srisukasih@mail.unnes.ac.id)

**Alfi Laila**

Universitas Nusantara PGRI Kediri, Kediri, Indonesia  
[l.alfi@yahoo.co.id](mailto:l.alfi@yahoo.co.id)

**Gunadi Adi Putra Yunus**

Universitas Khairun, Ternate, Indonesia  
[g.adimild@yahoo.com](mailto:g.adimild@yahoo.com)

## Abstract

Flipped classroom is a technique or model that plays an important role in promoting student's learning and achievement, this could create opportunities for active learning that could improve their performance and increase student engagement. The study aimed to examine the level of the influence of flipped classroom model, to test the fit of flipped classroom and student school engagement, student's participation and learning achievement, and school engagement and learning achievement. To analyze of student school engagement to learning achievement with flipped model by using SEM analyze. The research finding can be summarized as follows; The flipped model had a high level of student school engagement ( $M= 3, 438$ ). The flipped classroom model had a good fit to the data. All hypothesized paths were supported, all  $p < 0,05$ , there was a direct and significant effect of flipped model on achievement, standardized estimate = 0,373 ( $p < ,05$ ). This study also shows that, for flipped classroom model to occur, student engagement is one the important factors on learning achievement.

**Keywords:** flipped model, student school engagement, learning achievement, and SEM analyze

## 1. Introduction

Education is a lifelong process in which people learn to negotiate with their world although others lay significant role in this process, education is essentially something people must do for themselves [Mangier, 1984]. School of the primary arena for the manifestation of students' school engagement, its ways of promoting it are influenced by a student's individual propensities and the quality of his or her interpersonal relationships with significant others at school and home [You & Sharkey, 2009]. On the other hand, students' school engagement refers to a student's investment in learning, experience of belonging, goals, participation and values.

Education engagement and school membership comprise the central concept, in spite of these emphasis efforts to define and study the constructs represented by these formally. It's to improve learning achievement is the application of learning models that provide enough space for students to develop the potential and skills possessed, that is able to influence student school engagement is a flipped classroom model (FC). Flipped classroom is as a set of pedagogical approaches that move most information-transmission teaching out of class, uses class time for learning activities that are active and social, and requires students to complete pre-and/or-post class activities to fully benefit from in-class work [Dawson, 2014]. According to Bergmann [2012] basically the concept of a flipped class is this: that which is traditionally done in class is now done at home, and that which is traditionally done as homework is now completed in class. Flipped classroom approach is designed to utilize in-class time to encourage students to be active participants, hence, may be more likely to facilitate student need for autonomy and competence. Furthermore, by being active participants, students are more likely to experience greater levels of relatedness between them and the instructor as well as between them-selves [Abeyssekara et al, 2014].

In this study we present empirical analyze of student school engagement on learning achievement through flipped classroom models. The study aimed to examine the level of the influence of flipped classroom model, to test the fit of flipped classroom and student school engagement, student's participation and learning achievement, and

school engagement and learning achievement. To analyze of student school engagement to learning achievement with flipped model by using SEM analyze

## **2. Literature Review**

### **2.1. Flipped classroom**

Flipped classroom is a learning model that prioritizes learning through discussion activities, exercises, and scientific work. In other words this instructional model is given by educators by minimizing a number of direct instructions in teaching practice while maximizing interaction with each other. This can be done through classroom activities such as discussion, problem solving, and group work. Activities can be obtained through videos, articles, books, power points, handouts, or even combine with each other. One of the greatest benefits of flipping is that overall in interaction increases: teacher to teacher and student to student. Because the role of the teacher has changed from presenter of content to learning coach, we spend our time talking to kids. We are answering questions, working with small groups, and guiding the learning of each student individually[Bergmann, 2012].

According to Bishop[2013] flipped classroom as an educational technique that consists of two parts: 1) interactive group learning activities inside the classroom and direct computer-based individual instruction outside the classroom. In other words, the practice problems normally completed at home are worked on in the classroom, and the direct instruction normally given during class time is given homework through video lectures, reading assignments, or some other direct instruction delivery method, this puts the focus on moving tasks in space and time, rather than focusing on increasing engagement, autonomy or student centeredness[Abeysekara et al, 2014].

### **2.2. Student school engagement**

Student engagement evolves as a complex interplay between a student and the school context. The construct of student engagement has typically been introduced as a three-dimensional construct [Fredricks et al, 2004]. Behavioral engagement from participation in school activities, cognitive engagement from literature on achievement motivation and educational values, and affective engagement draws from conceptualization of attachment to school related other. Student engagement results from individual or intrinsic motivation need which makes students have positive feeling and continue their practice with perseverance and self-confidence [Mandinach, 2009]. If students do not have a sense of school engagement, they are likely to lose interest in studying. School engagement is a major factor which has both direct and indirect influences upon student's learning achievement in the classroom context.

School engagement is important for student learning and academic success, the drive behind the development of educational quality to the promotion of learning achievement. The teachers could manage to boost up students' active participation, they can help students develop a sense of school engagement, which in turn helps enhance students' learning achievement. Active participation in early grades accompanied by some degree of academic success, serve to perpetuate continued participation throughout the school years. Under optimal conditions engagement becomes the individual's habitual from of behavior.

#### **2.3.1. Behavioral engagement**

Behavioral engagement is a subtype of engagement pertains to students' participation in school activities, which can academic or non-academic [Willms, 2003]. Behavioral involvement in learning activities, attentiveness and school compliance, effort and persistence with schoolwork, school attendance having necessary equipment for active classroom participation. According to Hospell [2016] behavioral engagement as a multidimensional construct consisting of five dimensions: participation, following instructions, withdrawal, disruptive behavior, and absenteeism.

The positive impact of behavioral engagement on multiple educational outcomes has been well documented, for example argued that persistent behavioral engagement is an important correlate of long-term academic attainment. Fredricks [2004] argued that differentiate behavioral engagement and cognitive engagement in learning with respect to effort, its comes to behavioral engagement in learning, effort is understood as spending time and working on topic or task. On the other hand, cognitive engagement can be understood as the reasons for using cognitive strategies or investing the effort in the first place.

#### **2.3.2. Cognitive engagement**

Cognitive engagement in terms of a self-regulated or strategic approach to learning and valuing education has been shown to be positively with students' academic performance[Virtanen, 2016]. According to Voelkl[2012] cognitive engagement as a contemporary extension of the bipartite affective and behavioral student engagement models. Including cognitive engagement into the construct of student engagement has resulted in some overlap

dimensions cognitive engagement is defined as the extent to which students' are willing and able to take on the learning task and hand. This includes the amount of effort students are willing to invest in working on the hand [Conro & Mandinach, 1983], and how long they persist [Richardson, 2006].

### 2.3.3 Affective engagement

Affective engagement is based on students' attachment to school and member of the social community, which makes it specific to a particular school context [Fredricks, 2004]. It taps students' experiences of enjoyment and interest in school learning, such as experiences of warmth, connectedness, attachment, sense of belonging, feeling of being accepted by teachers and classmate and school membership.

Affective engagement relates indirectly to students' academic performance for increased behavioral and cognitive engagement, educational persistence, and resilience [Finn & Zimmer, 2012]. Affective engagement may to set the stage for behavioral and cognitive engagement, therefore some students' can still succeed academically despite of warning feeling about school, which suggests that youth may not always need to be affectively engaged to attain positive outcomes. On the other hand, affective engagement can be compensated for by other subtypes of engagement, at least with regard to academic performance.

## 3. Research Methodology

In this research, the data were collected by means of the questionnaire. The reliability was estimated using Cronbach's Alpha correlation. The reliability of student school engagement was equal to 0, 893. Descriptive statistic, frequency, percentage, mean, and standard deviation were used to analyze the data. The confirmatory factor analysis was used to test the fit of the measurement model and SEM analyzed was performed to test the hypothesized engagement. The study samples consisted of 65 students' grade 4 at elementary school. More than half of them or 63,2 % were female, the major of students were 11 years old.

## 4. Discussion

The finding of this research confirm that, by using a flipped classroom, students' school engagement did enhance learning achievement. Students' were more emotionally engaged with the material provide in the flipped classroom, they feel interested in the class, enjoy learning and have fun. This is followed by their behavioral engagement when the lecturer directed them on the activities in class, they listened carefully, paid attention and participated in the class activities.

### 4.1 Students' school engagement

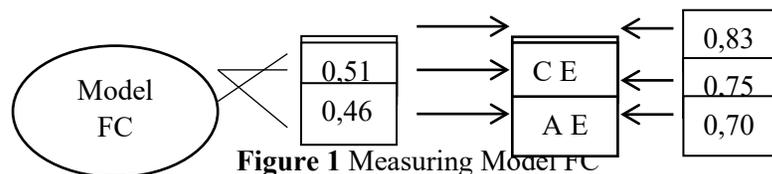
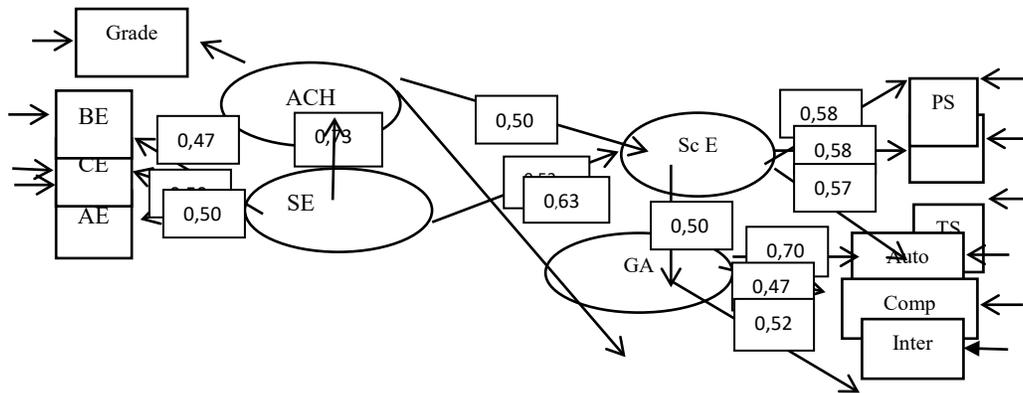


Figure 1 Measuring Model FC

Table 1. Coefficient of Validity and Reliability Student Engagement

No	Factor	Validity coefficient	Reliability coefficient
1	Behavioral Engagement	0,57	0,83
2	Cognitive Engagement	0,51	0,75
3	Affective Engagement	0,46	0,70

The results show that model factor oriented to student school engagement is a factor that contributes to the construct of improvement indicator achievement. Based on table 1 it can be concluded that the factors of engagement on the model of learning provide a meaningful influence on student achievement. Analysis of the relationship between the reliability variable and the engagement variable. Based on the identification of the path coefficient value, the variable reliability significantly affects engagement at the significance level of  $\alpha = 5\%$  because the t-statistic is 0.373. Thus reliability statistically affects student engagement.



Chi-Square = -1,960 df = 62 P-value = 0,064 RMSEA = 0,00

Figure 2. Structural Model of Factors that Affect Learning Achievement

#### 4.2 Structural Model

Based on Figure 2 can be seen the direct effects and indirect effects, which includes the relationship between the independent variable and the dependent variable (indirect effects of KSI on ETA)

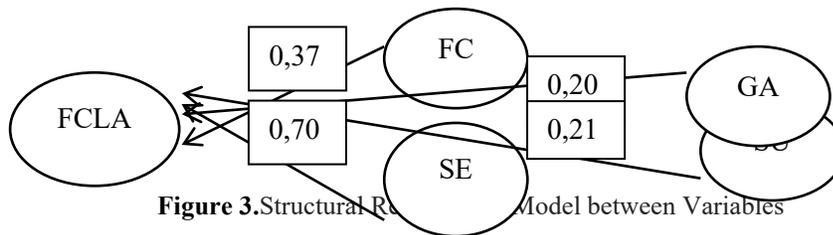


Figure 3. Structural Model between Variables

Table 2. Results of Analysis among Variables

No	Variable	Parameter	Estimated	Scor-T
1	SE	$\gamma_{41}$	0,70	7,25
2	FC	$\beta_{42}$	-0,37	-4,89
3	SU	$\beta_{42}$	0,21	2,87
4	GA	$\beta_{43}$	0,20	4,45

Based on table 2 can be explained the direct effect picture between the variables as follows: (1) there is a direct effect and meaningful of school quality to student's engagement with the estimated price  $\gamma_{41} = 0,70$  and value  $-t = 7,25 > 1,96$ ; (2) general ability and engagement with estimation  $\beta_{42} = -0,37$  and value  $-t = -4,89 > 1,96$ ; (3) school engagement and model with estimation of  $\beta_{42} = 0,21$  and value  $-t = 2,87 > -1,96$ ; (4) participation and engagement with estimation of  $\beta_{43} = 0,20$  and value  $-t = 4,45 > 1,96$ .

#### 5. Recommendations

Educational agencies and related administrator should raise awareness of the quality of teachers' role in promoting student's school engagement for increase achievement with the following measure: 1) teachers' knowledge and understanding about establishment of school engagement to improve and develop examined its efficiency, 2) teachers' should be assigned to use methods to increase students' school engagement and create many

different educational that help students build on their knowledge, 3) knowledge about what school engagement and flipped model is, how important it is, and which methods can teachers promote achievement students' school engagement.

Related agencies and administrator should devise policies to reflect the role of teachers it is to promote achievement students' school engagement. While policies have been implemented model flipped classroom which touch on this role and clear specifications off role of promoting students' school engagement.

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## Biographies

**Sri Sukasih** as a civil servant permanent lecturer at Semarang State University, Central Java Province, Indonesia. She has completed her doctoral studies at the Yogyakarta state university in 2020 in the field of education. She actively participates in seminars both at national and international levels, besides that she also participates in the professional organization called AIBPM (Association of International Business and Professional Management) and becomes a reviewer of the national journal Sinta 3 at Muhammadiyah University Surakarta.

**Alfi Laila** a foundation permanent lecturer at Nusantara University PGRI Kediri, East Java province, Indonesia. Currently she is still pursuing doctoral studies at Yogyakarta State University in the field of educational science study program focusing on basic education studies. In addition, she is a member of the senate at her teaching

institution. She actively participates in scientific activities in the form of seminars, workshops, and trainings both at national and international levels.

**Gunadi Adi Putra Yunus** as a civil servants permanent lecturer at Khaerun Ternate State University, North Maluku, Indonesia. Currently he is still pursuing doctoral studies at Yogyakarta State University in the field of science education with the Indonesian Ministry of National Education scholarship.