The Relationship between Positive Emotion, Self-Efficacy, and Student Engagement during the Covid-19 Pandemic

Surahman[1*], Moh Fauzil Adhim[2]

[1, 2] *Master of Psychology, University of Muhammadiyah Malang, Indonesia*
*Corresponding Author**

Abstract: **During the Covid-19 pandemic, students are urged to do online learning hence their involvement in learning is decreased. Student engagement can be advanced by positive emotion through confidence towards students' abilities. This study aims to determine the effect of positive emotion on student engagement mediated by self-efficacy. This type of research is a non-experimental quantitative study with a correlational approach. The instrument utilized is Dispositional Positive Emotion Scale (DPES), Measuring School Engagement (MSE), and Academic Efficacy. The research subjects were high school students (N = 188). The results showed that self-efficacy can act as a mediator for the relationship between positive emotion and student engagement. Particular effects of positive emotion appeared as a result of student engagement and self-efficacy.**

Keywords: **Covid-19, positive emotion, self-efficacy, student engagement**

I. INTRODUCTION

Since March 2020, the Indonesian authority issued several emergency educational policies to prevent the spread of the Covid-19 virus, one of which is learning from home (Kemendikbud, 2020). The Covid-19 pandemic caused classroom learning to be halted and carried out online. The interaction between teachers and students cannot be carried out as usual, resulting in decreased student involvement in learning (Chu, 2020).

Engagement and interaction between student-teacher interaction during online learning emanates in difficulties for students in understanding knowledge (Zhu, 2006). The efforts to increase student engagement during the Covid-19 pandemic are important to preserve the quality of learning (Chu, 2020; Gares et al., 2020; Perets et al., 2020; Yang et al., 2020; Zayapragassarazan, 2020).

Student engagement is a construct used to explain the quality of learning activities and student involvement in productive learning activities (Kuh, 2009). Engagement essentially consists of two constructs with various kinds of terminology that are usually used. First, engagement represents the individual's encouragement to perform a particular task or can be called the motivational factor. Engagement is related to how someone intends to continue to be involved in an activity. The second construct is motivational behavior, where engagement is not only motivated but also proven by adjusted behavior (Thoonen et al., 2011).

Student engagement aspects in school activities include cognitive engagement, emotional engagement, and behavior engagement. Cognitive engagement consists of controlling work or tasks and the learning process. Emotional engagement consists of self-interest in learning and one's assessment of school and peers. The objectives, efforts, and involvement of students in activities outside the classroom or non-academic are part of behavior engagement (Hart et al., 2011). These aspects of student engagement produce effect on academic performances advancement (Rajabalee et al., 2019), academic achievement (Gunuc, 2019), motivation (van Rooij et al., 2017), well-being (Boulton et al., 2019), and a non-dropout predictor of students (Truta et al., 2018).

There are several factors that affect student engagement, for instance classroom emotional processes (Mazer, 2016), personal resources (Bakker et al., 2015), and emotion regulation (Fried & Chapman, 2012). One of the factors that affect student engagement is positive emotion. The results of the study explained that students who have positive emotion are able to participate in academic or non-academic, social, and emotional activities while in school (Denovan et al., 2019; Volet et al., 2019). Positive emotion fosters individual confidence in conducting academic tasks and optimizes the level of relationship satisfaction with school and peers (Liu et al., 2017).

Positive emotion indicates the presence of optimal well-being. In addition, positive emotion does not only make individuals feel good at certain times, but also predict students' future well-being (Fredrickson & Joiner, 2002). There are seven aspects to positive emotion; by its nature it is joy, hope, love or affectionate, calm, pride, pleasure, and realistic (Shamim & Muazzam, 2018). According to the premise above, positive emotion is eminent for students in the learning process to support student engagement.

Previous research conducted on 293 students found that positive emotion was positively correlated with student engagement. It was a factor that affected individuals and their environment such as student involvement in school

activities and support from adults, such as teachers. In addition, positive emotion can predict future welfare and engagement of children and adolescents (Reschly et al., 2008). Apart from positive emotion, another predictor of student engagement is self-efficacy.

It is a person's assessment of his or her ability to organize and carry out the actions needed to achieve certain goals. There are three aspects of self-efficacy; they are level, strength, and generality. The level describing the degree of self-efficacy differs from one another depending on the difficulty of the task. The aspect of strength relates to the strength level of an individual's belief or expectation regarding his ability. Generality relates to the broad field of behavior in which individuals feel confident in their abilities (Bandura, 1998).

Students who believe that they are capable of performing activities that will lead to success will be more involved cognitively and behaviorally with activities at school (Sökmen, 2019). Self-efficacy interventions have also been shown to increase student engagement (Breso et al., 2011). Self-efficacy plays an important role for students in doing school work and behaving. Moreover, student engagement is a critical success factor in the learning process. The results of the meta-analysis show that there is a significant effect of self-efficacy towards student engagement (Chang & Chien, 2015).

Other research demonstrates that self-efficacy is influenced by positive emotion. The correlation of the two variables describes Buonomo et al. (2019) that positive emotion can affect psychological resources such as self-efficacy. Positive emotion helps a person to be able to accept that he is effective in carrying out a given task. The perception or belief that he has the ability to take the expected action is the meaning of self-efficacy.

Based on the explanation above, it is known that student engagement can be influenced by positive emotion. Another variable that also affects student engagement is self-efficacy. Students who have positive emotion and are strengthened by self-efficacy may demonstrate a positive effect on student engagement. The purpose of this study was to determine the effect of positive emotion on student engagement during the Covid-19 pandemic which is mediated by self-efficacy. The hypothesis in this study is

1. There is a direct effect of positive emotion on student engagement;
2. Positive emotion affects students' self-efficacy when studying at home during the Covid-19 pandemic;
3. Self-efficacy can affect student engagement which is controlled by positive emotion;
4. There is effect of positive emotion on student engagement mediated by self-efficacy.

II. METHODOLOGY

Research Design

This research uses non-experimental quantitative study with a correlational approach. This approach is used to explain the association between positive emotion, self-efficacy, and student engagement.

A. Research Subjects

Data were collected from two senior high schools in Malang Regency and Batu City, Indonesia, which was able to facilitate researchers during a pandemic. The researcher sent a set of questionnaires to the school and distributed them to students. In Table I, it is explained that 188 students returned the questionnaire and the data could be analyzed.

Table I : Respondent's Demographic Characteristic

Subject	Frequency	Percentage
Sex		
Male	107	57%
Female	81	43%
Age		
15 years old	54	29%
16 years old	92	49%
17 years old	42	22%

B. Research Instrument

Positive emotion was measured by the Dispositional Positive Emotion Scale (DPES) developed by Shiota et al. (2006). This scale consisted of 38 items which assessed 7 aspects in particular; joy, contentment, pride, love, compassion, amusement, and awe. DPES utilized likert scale with seven score categories, (1) "strongly disagree" to (7) "strongly agree". A sample item was "I like it when helping others". The reliability coefficient of this scale was 0.94.

Student engagement was measured by Measuring School Engagement (MSE) developed by Gutiérrez et al. (2016) with 20 likert model items described by five score categories, (1) "strongly disagree" to (5) "strongly agree". Measurement of this scale was based on four aspects i.e. behavioral, emotional, cognitive, and agency. An example of the item was "I made many friends at school". The reliability coefficient of this scale was 0.86.

Self-efficacy was measured by the Academic Efficacy developed by Midgley et al. (2000) with a total of 5 items. Measurement of items utilized Likert scale with five answer choices, namely (1) "Strongly Disagree" to (5) "Strongly Agree". An example item would be "I believe I can figure out how to complete the most difficult tasks". The coefficient of this scale was 0.69.

C. Data Analysis

Data were analyzed by regression analysis. According to Hayes & Preacher (2004) to test the association between the independent variable and the dependent variable which was mediated by the mediator variable, the analysis of the mediated multiple regression was applied. Researchers used

the SPSS version 20.0 program *for windows* in its analysis process.

III. RESULT

A. Description of Research Variables

Before testing the hypothesis, the mean, standard deviation, and intercorrelation between variables were tested. In Table 2 the mean and standard deviation of student engagement variables were (M = 2.99; SD =.37), positive emotion (M = 5.34; SD =.69), and self-efficacy (M = 3.71; SD =.78)

Table II: Mean, Standard Deviation, and Intercorrelation between Variables

No	Variable	Mean	Standard Deviation	1	2	3
1	SE	2.99	.37	1	.482**	.358**
2	PE	5.34	.69		1	.336**
3	SEF	3.71	.78			1

***p* <.01

SE: student engagement, PE: positive emotion, SEF: self-efficacy

Furthermore, the results of the intercorrelation test value among variables showed that student engagement significantly correlated with positive emotion (r = .482, p = .01). Student engagement is also positively correlated with self-efficacy (r = .358, p = .01). Positive emotion is known to be positively and significantly correlated with self-efficacy (r = .336, p = .01).

B. Hypothesis Test Results

After calculating the mean, standard deviation, and intercorrelation test between variables, the researcher performed a mediated multiple regression analysis on all variables. In Table 3, the results of data analysis show that positive emotion affects student engagement (βc = .48; tc = 7.51; p = .001). These results concluded that hypothesis 1 is accepted. Students who own positive emotion during the Covid-19 pandemic can develop their emotional, social, and behavioral involvement in learning.

Table 3: Analysis Results on Mediated Multiple Regression

Inter-Variable Relationship	B	T	Sig.
PE - SE	.48	7.51	.001
PE - SEF	.33	4.86	.001
SEF - SE controlled by PE	.22	3.32	.001
PE - SE mediated by SEF	.40	6.14.	.001

SE: student engagement, PE: positive emotion, SEF: self-efficacy

Hypothesis 2 test was conducted to determine the effect of positive emotion on self-efficacy. The results of the analysis show that hypothesis 2 is accepted (βa = .33; ta = 4.86; p =.001). These results explain that students who hold positive emotion have a significant impact on confidence in their abilities. The next finding is the effect of self-efficacy on student engagement which is controlled by positive emotion (βb = .22; tb = 3.32; p = .001). Hypothesis 3 was accepted; or students believe their abilities can increase their involvement in learning. Analysis on the role of self-efficacy as a mediator positive emotion relationship and student engagement ($\beta c'$ = .40; tc' = 6.14; p = .001). The results explain that hypothesis 4 is also accepted.

IV. DISCUSSION

The findings in the study prove that student engagement is directly influenced by positive emotion or through self-efficacy. Based on the results of the analysis, it is known that students who have positive emotion increase student engagement. The results of this study are in accordance with the research conducted by Volet et al. (2019) about positive emotion and its relationship with engagement in learning process during science subject. Students emotional experiences related to joy can influence engagement in collaborative and effective learning. Other research also explains that positive emotion can affect emotional and behavioral engagement. This shows that students who have positive emotions such as being happy, satisfied, and proud will support their involvement in academic and non-academic activities at school (King & Gaerlan, 2014).

During online learning due to the Covid-19 pandemic, teachers who apply positive psychology teaching strategies, which are built in by positive emotion, can encourage student engagement (Chu, 2020). Positive emotion helps provide an overview of goals and challenges so that students will be actively involved in the learning process (Pekrun et al., 2002). In addition, positive emotion expands cognitive processes to increase adaptive responses that arise inside the mind when facing difficult situations. Over time, that would have an impact on learning productivity (Denovan et al., 2019; Oriol-Granado et al., 2017).

The next result shows that students who have positive emotions can increase self-efficacy. This result is supported by research of Buonomo et al. (2019) that positive emotion expressed by the teacher has an impact on self-efficacy to teach effectively. Another opinion states that self-efficacy, which is one of the personal resources, is influenced by positive emotion. Feelings of pleasure, pride, and satisfaction that exist in the individual will increase self-confidence to do something he wants (Fredrickson, 2001). Positive emotion helps individuals consider themselves effective in performing daily tasks at work (Llorens et al., 2007). This also corresponds to broaden and build theory which states that positive emotions such as happiness, pleasure, and enjoyment expand one's awareness and explore thoughts that one is capable (Fredrickson, 2004).

The results also shows that there was an effect of self-efficacy on student engagement. Students who believe that they have the ability can increase their involvement in school activities. These results are supported by previous studies which stated that self-efficacy fosters student participation in school so that it has an impact on academic

activities (Bakker et al., 2015; Dogan, 2015; Maricuțoiu & Sulea, 2019; Sökmen, 2019). Self-efficacy as a self-regulatory mechanism is required to regulate and carry out necessary actions to produce certain achievements.

Self-efficacy is known to be a mediator for positive emotion and student engagement. The research results described by Ouweneel et al. (2011) states that positive emotion affects student engagement through personal resources, one of which is self-efficacy. Student engagement and relationship satisfaction with school and peers are determined not only by positive emotions, but also individual belief in their abilities.

V. CONCLUSION

Based on the research results, it can be concluded that positive emotion can affect student engagement and self-efficacy during the Covid-19 pandemic. The association between positive emotion and student engagement can be mediated by self-efficacy. Positive emotions possessed by students have an effect on student involvement during online learning through belief in their abilities.

This research is expected to contribute to teachers and parents to instill positive emotions towards students for increasing involvement in the learning process carried out at home. Longitudinal research designs are recommended in this type of research. By collecting data at a certain time in a long period of time, it is expected to obtain more reliable data regarding student engagement and positive student emotion. To obtain more complex data, measurement of student engagement should be carried out in each aspect.

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