

## Determining Factors Affected Online Learning Satisfaction: An Empirical Study in Indonesia during Pandemic Covid-19 Period

<sup>1</sup>Theresia Trisanti, <sup>2</sup>Badr M Alsolami, <sup>3</sup>Heni Kusumawati, <sup>4</sup>Noormalita Primandaru

<sup>1</sup>*Sekolah Tinggi Ilmu Ekonomi YKPN, Yogyakarta Jalan Seturan Yogyakarta 55281. Indonesia*

<sup>2</sup>*College of Engineering and Islamic Architecture, Umm Al Qura. Saudi Arabia*

<sup>3,4</sup>*Sekolah Tinggi Ilmu Ekonomi YKPN, Yogyakarta Jalan Seturan Yogyakarta 55281. Indonesia*

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**ABSTRACT :** The purpose of this study is to identify factors that influence online learning satisfaction at home as a result of the COVID-19 pandemic and obtaining information on problems in the teaching and learning process. The independent variable used by the researcher were: student behavior, cognitive and emotional engagement, while the intervening variable was organizational learning culture and dependent variable was online learning satisfaction. This study uses primary data from questionnaires, the sample collection method used in this study was convenience sampling and variable measurement using a Likert's scale. The results showed that: student behavior have no significant positive effect on online learning satisfaction by students. Student cognitive and emotional engagement on online learning satisfaction have significant positive effect on online learning satisfaction. Organizational learning culture capable as mediating variable to cognitive and emotional engagement, but student behavior has no significant effect on online learning satisfaction if it is not mediated by the organizational learning culture. The contribution of this research is to emphasize that the success of online learning is influenced by organizational learning culture and there is need cooperation and reciprocity between lecturers and students that make online learning more effective.

**KEYWORDS:** student behavior, cognitive, emotional engagement, online learning satisfaction and organizational learning culture.

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### I. INTRODUCTION

When the COVID-19 outbreak appeared, all human activities were restricted, including learning activities both at the elementary school level and at the university level, starting to implement learning activities at home. This is done to limit the spread of massive viruses. In Indonesia home learning policy began to be implemented on March 9, 2020 after the minister of education and culture issued a circular number 2 in 2020 and number 3 in 2020 about online learning and working from home in order to prevent the spread of Corona Virus Disease (COVID-19). All university in each affected area are asked to stop academic activities such as lectures face to face. As a follow-up to the circular, all tertiary institutions were also asked to issue policies on the online learning process for students. Therefore all universities in Indonesia make adjustments to this policy in changing all teaching and learning activities carried out online (Bao, 2020; Chick et al., 2020).

The online lecture process is considered as a new challenge in the era of the industrial revolution 4.0, especially in the midst of a pandemic like today. That is because this year Indonesia officially just issued a higher education policy specifically responding to the demands of the industrial revolution 4.0, with a policy called an independent campus. This program opens very wide space for students to determine their own areas of learning that are their focus and interest. In addition, this program can also encourage students not only to learn in the classroom but also to the community and involve broad agencies. At a time like now the digital-based learning model has been massively maximized almost throughout Indonesia. Although this model also has not been comprehensively reach the lower social strata in society. Because basically this learning model also has conditions that must be fulfilled namely access to digital information (Bao, 2020; Chick et al., 2020). For this reason, in terms of access to digital technology, not all students have the same access. Online lectures have the potential to trigger social inequality which has an impact on the quality of student learning. This is due to the availability of uneven digital infrastructure, Indonesia currently does not provide Information and Communication Technology (ICT) infrastructure, the main prerequisite for distance learning, which is adequate and widespread for all its citizens. In addition, socio-economic status also influences the level of competence and literacy in using ICT, when lecturers or students who are technology illiterate will not be able to manage learning.

The close links between social inequalities, availability of access, and make digital disparities a multidimensional problem (Eom & Ashill, 2016; Li et al., 2020). It is undeniable that all parties who undergo online lectures experience panic both lecturers and students though. Technical problems become one of the obstacles of the many obstacles and problems in the learning process online. Technical problems encountered usually start from quota constraints, signals, to obstacles from the online application that we use. Therefore, in general, we are not thoroughly prepared to do online lectures at this time, especially since many students are questioning the complaints of failure to understand the material submitted online. This is indeed considered reasonable because both students and lecturers do not yet have the transition and adaptability of the learning process like this. Moreover, basically every student has different abilities and experiences from other students who may already be familiar with online learning (Park & Choi, 2009; Siragusa et al., 2007).

Li et al., (2020) and Zhang et al., (2019) in their literature study explained that problems such as low student achievement, increased levels of student boredom and increased cases of school dropouts as a result of disengagement of students in schools. Appleton, Christensen and Furlong (2008) explained that besides students involved in the teaching and learning process, there were also students who were not involved such as being apathetic, chatting with friends, not excited, not focused or even sleeping during the learning process. Appleton, Christensen and Furlong (2008) add that student involvement in school is very important, this is due to the large number of students feeling bored, unmotivated and not involved, this makes them detached (not involved) from the academic aspect and social environment in school life.

Student involvement in school is the quality and quantity of students' psychological conditions such as cognitive, emotional and behavioral reactions to the learning process, as well as academic and social activities in class or outside the classroom to achieve good learning outcomes. Saeki and Quirk (2015) adds that student involvement is a psychological component related to students' sense of ownership of the school, acceptance of school values and behavioral component related to participation in school activities. Indicators of student engagement in school that are consistently discussed in the literature include participation in school activities, achieving high grades, time spent on homework and quality homework (Lester et al., 2017; Siragusa et al., 2007). Meanwhile student disengagement at school is usually manifested in the form of withdrawal or inattention to school activities, having poor abilities, engaging in problematic behavior and ultimately leading to an increase in students dropping out of school. This is supported by the results of research from the High School Survey of Student Engagement which explains that students often experience boredom at school and cannot make use of their study time while inside or outside the classroom (Kim & Frick, 2011; Lester et al., 2017).

Education institution is expected think about what process students should go through in order to produce graduates (output) the good one. This process can be in the form of determining the appropriate learning method for each participant students without neglecting that each student has the ability and different characteristics. A good learning process will support success learn each student. Learning achievement is one proof that shows achievement (competence) someone after carrying out the learning process according to the weight or value that is successful obtained (Bolliger, 2004; Cole et al., 2014). There are at least three factors that affect student ability to complete online learning satisfaction, namely components of engagement behavior, cognitive and emotions. These three components it interacts dynamically with one another within individuals. Engagement, emotional and cognitive behavioral characteristics about how students act, feel and thinking (Chen & Jang, 2010; Roczen et al., 2014).

Engagement related to school activities has become important concepts relating to educational outcomes. Some research concluded that student engagement is students who emotionally involved with teachers, school, and friends, students are also involved in learning activities at school such as participating in extracurricular activities, have good values, and also have trust and perception of self, school, teacher, and a good friend (Chen & Jang, 2010; Liu et al., 2010; Nortvig et al., 2018). It is the same as it says by Saeki and Quirk, (2015) student engagement is students feel actively involved at school emotionally, cognitively and behaviorally. Other one of the characteristics of students is cognitive style, some researcher formulated cognitive style as a way of functioning self (self) which remains shown / revealed by someone in the activities / activities of perception and intellect. Style cognitive is concerned with form, not content of cognitive activity. Cognitive style refers to individual differences in the aspects of seeing, thinking, solving problems, learning, and in connect with other people (Bradford, 2011 and Zhu, 2006).

Organizational culture in university should be unique and fit of the organization in order to culture the organizations are not the same and cannot be duplicated by other organizations as well as being the hallmark of organization. Organizational culture should encourage members to work.

Organizational culture lack of motivation or support for its employees will reduce employee performance. Organizational culture will foster work commitment. Work commitment includes sincerity in carry out work, there is a willingness to work better, loyalty to the organization, and compliance against the values and goals of the organization (Stoll, 2010; C. Zhu & Engels, 2014).

Based on the description above, there are various challenges that must be faced by e-learning users both from the side of technology developers, teachers and students will affect the success of online learning. With various advantages from the use of e-learning in the learning process, and technological developments. The following are the research questions formulation that can be obtained based on the background of the problems that have been described above.

1. Does student behavior engagement has effect on learning online satisfaction?
2. Does student cognitive behavior has effect on learning online satisfactions
3. Does Student emotional engagement has effect on learning online satisfaction?
4. Does student behavior engagement influence on learning online satisfaction with organizational learning culture as a mediating variable?
5. Does student cognitive engagement influence on learning online satisfaction with organizational learning culture as a mediating variable?
6. Does student emotional engagement influence on learning online satisfaction with organizational learning culture as a mediating variable?

## **II. LITERATURE REVIEW**

As we all know that there are many learning theories that develop with different views and thoughts in explaining how humans learn. All of these learning theories contribute to us explaining how students learning process. What we know about these various theories we will be able to build a stronger understanding of what is needed in student learning in school. Every learning theory has something to contribute. The theories together provide a comprehensive explanation of what is required for learning. This section will discuss one by one the main theories of learning in relation to learning in education process (Fredricks, 2011; Lester et al., 2017; Picciano et al., 2010). Here are some explanation of these theories.

1. **Humanistic Learning Theory.** Abraham Maslow and Carl Rogers are included in the key figures of humanism. The main goal of humanism can be described as the development of autonomous human self-actualization. In humanism, learning is a learner-centered and personalized process, and the role of the educator is as a facilitator. Affection and cognitive needs are key, and the goal is to develop self-actualizing human beings in a cooperative and supportive environment. It was also explained that in essence every human being is unique, has individual potential and an internal drive to develop and determine his behavior. Because in its relation, every human being is free and has a tendency to grow and develop to achieve self-actualization.
2. **Behavioristic Learning Theory.** According to behavioristic theory, learning is a change in behavior as a result of the interaction between stimulus and response. A person is considered to have learned something if he is able to show changes in behavior. In other words, learning is a form of change experienced by students in terms of their ability to behave in new ways as a result of the interaction between stimulus and response.
3. **Theory of Social Learning.** The concept of learning motivation is closely related to the principle that behavior that received reinforcement in the past is more likely to be repeated than behavior that does not receive reinforcement or behavior that is subject to punishment (punishment). In fact, instead of discussing the concept of learning motivation, behavioral theorists focus more on how far students have learned to do school work in order to get the desired results.
4. **Cognitive Learning Theory.** Some researcher argues that teachers must be able to develop students' cognitive potential through a meaningful learning process. Just like believes that student learning activities, especially those at the primary education level - will be beneficial if they are involved in many hands-on activities. However, for students at a higher level of education, direct activities will take up a lot of time. It is more effective if the teacher uses explanations, concept maps, demonstrations, diagrams and illustrations.

**Hypothesis Development :** Educational institution are expected to think about what process students should go through in order to produce graduates (output) the good one. This process can be in the form of determining the appropriate learning method for each participant students without neglecting that each student has the ability and different characteristics. A good learning process will support success learn each student. Learning achievement is one proof that shows achievement (competence) someone after carrying out the learning process according to the weight or value that is successful obtained. Student involvement in school is the quality and quantity of the

student's psychological state such as cognitive, emotional and behavioral reactions to processes learning, as well as academic and social activities in class or outside the classroom to achieve results good result of study (Chen & Jang, 2010; Kuh, 2001; Li et al., 2020; Linnenbrink-Garcia & Pekrun, 2011). Three of the characteristics of students are: behavior, cognitive and emotional engagement will related for hypothesis development.

The first component is the behavioral component is behavioral engagement where is this component leads to direct participation and involvement in academic activities at school for example attendance, participation in learning activities, obeying rules and work assignments. This component can be defined through three categories namely compliance with regulations, involvement in learning activities (paying attention lessons, ask questions and participate in discussions) and participate as well as in sports and organizational activities in school. Students have various potentials that are ready to develop. The teacher is obliged to provide a harmonious environment so that the activity can lead to the desired goal (Bryan & Solmon, 2012; Skaalvik & Skaalvik, 2016; Zhang et al., 2019). The willingness of teachers to try to find, explore and look for various breakthroughs, approaches, methods and learning systems is one of the supports for the emergence of new enlightening innovations. Based on the description above, the proposed hypothesis is:

H<sub>1</sub>: Student behavior engagement effect on learning online satisfaction

The second component is the cognitive component (cognitive engagement), refers to the quality of the process cognitive and student learning strategies towards the task school for example willpower and perseverance for study, self-regulation and love challenges (Gibbs and Poskitt, 2010). This component also includes motivation to learn and use strategies cognitive and metacognitive thinking and learning (Fredricks, Blumenfeld, & Paris, 2004). Cognitive engagement is the involvement of students with the learning process of students in class which shows that students attend not only their body but also His mind: includes students paying attention, concentration, focus, absorb, participate, and have a willingness to try to exceed standards owned (Connel & Werborn, 1990). So the dimensions it looks at how student effort is needed in understanding and mastering a material so students achieve these abilities. The third component is, student involvement emotionally (emotional engagement) that refers to a sense of ownership in the school, interest, perception of the value of learning, reaction positive and negative towards teachers, friends and activities school (Gibbs & Poskitt, 2010). The hypotheses in this study are:

H<sub>2</sub>: Student cognitive behavior effect on learning online satisfaction

High academic success requires emotional competence and student engagement in schools or university. Emotional competence is very important for student success in both fields academic at school as well as within areas of life outside of school. Emotional intelligence is very important in learning because of how efforts to develop a child in order to have high intellectual intelligence and at the same time a very human being has a very emotional intelligence high anyway. A balance between the two intelligences is necessary if want someone who is smart, creative and human who can empathize, who can control their emotions, who can motivate themselves so they can independent, who is always introspective because he knows the feelings that are in him and the feelings that exist for others. Based on the description above, the proposed hypothesis is:

H<sub>3</sub>: Student emotional engagement has effect on learning online satisfaction

In general, organizational learning culture refers to a collective mental view of life in an organization or collective mental programming that develops in a learning organization or a learning community. Learning communities are places where relationships are always well nurtured; openness and diversity are valued; curiosity becomes supremacy; experimentation became a habit; and there is persistence in finding answers to problems. According to Stoll, (2010) and C. Zhu & Engels (2014), an organizational learning culture is a culture that values learning, encourages and compensates for risk taking, and a culture where all are responsible for their own learning and learning from other parties.

The organizational learning culture at the university describes relationships environment that gives influence or effect for the entire academic community in higher education both students, lecturers and employees. Organizational learning culture represents trust and behavior carried out by the entire academic community exist at the higher education and it is believed together to form an organization and determine the boundaries therein. University organizational culture represents the understanding and agreement between the components that is in the higher education institution that forms response to internal and external demands (Stoll, 2010; C. Zhu & Engels, 2014).

Organizational learning culture reflected in planning, cooperation, communication, training and learning innovation development. It is hoped that the university organizational learning culture will strengthen the online learning process, so that students will be stronger motivation in reaching the online learning satisfaction (C. Zhu & Engels, 2014). Therefore the proposed for three hypothesis are:

H<sub>5</sub>: Student behavior engagement influence on learning online satisfaction with organizational learning culture as a mediating variable

H<sub>6</sub>: Student cognitive engagement influence on learning online satisfaction with organizational learning culture as a mediating variable

H<sub>7</sub>: Student emotional engagement influence on learning online satisfaction with organizational learning culture as a mediating variable

### III. RESEARCH FRAMEWORK

This study will systematically examine the effect of student behavior engagement, student cognitive engagement and student emotional engagement on online learning satisfaction, with organizational learning culture as a moderating variable. The research model developed can be seen in the following chart:

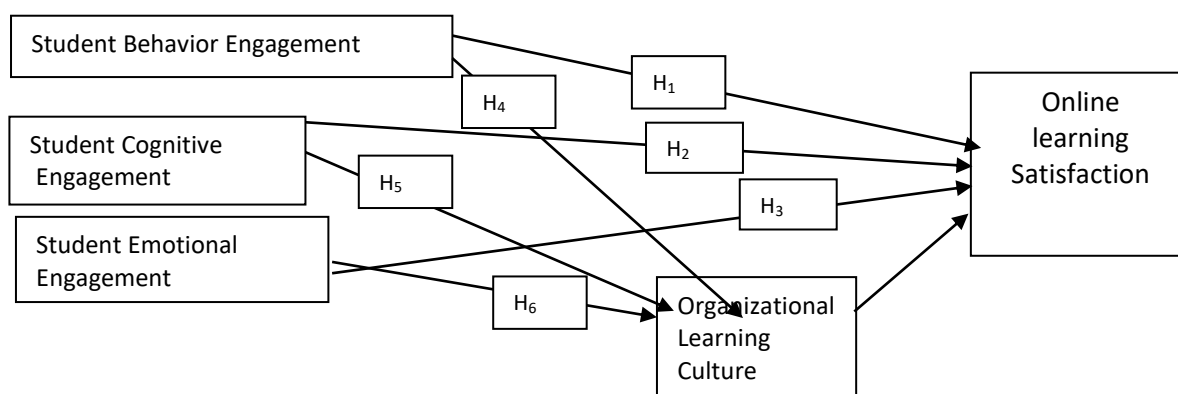


Figure 1. Research Framework

#### Definitions of Operational Variables

The variables in this study use the dependent variable and the independent variable. The variables used in this study are three independent variables, one mediating variable and one dependent variable:

1. The dependent variable is a variable that is influenced by the independent variable. This study uses the dependent variable to online learning satisfaction.
2. The independent variable is a variable that will affect the dependent variable. The independent variable of this study consists of three variables, including: student behavior engagement, student cognitive engagement and student emotional engagement.
3. Mediating variable is a variable that theoretically affects the relationship between the independent variable (independent) and the related variable (dependent) into an indirect relationship that cannot be measured and observed. The intervening variable is an intermediate/ interrupter variable that lies between the independent variable (independent) and the related variable (dependent), so that the independent variable does not directly affect the emergence or change of the dependent variable. The mediating variable of this study organizational learning culture.

**Research Finding and Discussions :** The object of this research are Indonesia students, location in the city of Yogyakarta which includes 4 universities, namely; STIE YKPN, Indonesian Islamic University, Yogyakarta Technology University, and Gadjah Mada University. The distribution of questionnaires is carried out only through Google form so that the questionnaire can be distributed without having to go directly to the respondents given the Covid-19 pandemic that is happening all over the world, including Indonesia. The process of distributing questionnaires began on March 2, 2020 up to May 15, 2020. The total number of questionnaires distributed was 260 but the number of respondents that could be tested and processed only 243. The researcher conducted a reliability test to ascertain whether the indicators used could be answered by respondents (either the

same or different) consistently over time when used repeatedly. The following below shows that all instruments from each variable used are reliable, seen from Cronbach's Alpha greater than 0.7. The Cronbach's Alpha value of each variable marked in the red box above is greater than 0.7. This shows that all the instruments used in this study are reliable.

Table 1

Variable	The Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Student Behavior Engagement	0,792	0,868	0,627
Student Cognitive Engagement	0,795	0,866	0,618
Student Emotional Engagement	0,755	0,845	0,577
Organizational Learning Culture	0,762	0,837	0,509
Online Learning Satisfaction	0,779	0,889	0,606

Researchers tested linear correlation between independent variables. This study does not contain Collinearity Statistics problems because the Variance Inflation Factor (VIF) value in the table below is smaller than 5. All inner VIF numbers less than 5 indicate that there is no multicollinearity between the independent variables.

Table 2

Variable	Learning Culture	Learning Satisfaction
Student Behavior Engagement	1,650	1,662
Student Cognitive Engagement	1,332	1,442
Student Emotional Engagement	1,484	1,717
Organizational Learning Culture		1,568

R Square shows the ability of student behavior engagement, student cognitive engagement and student emotional engagement in this research model to explain variations in online learning satisfaction, which is 0.636. The value of R Square (R<sup>2</sup>) = 0.651 greater than 0.50 is classified as all independent variables have ability to explain variations in the dependent variable.

Table 3

Variable	R Square	R Square Adjusted
Organizational Learning Culture	0,362	0,342
Online Learning Satisfaction	0,651	0,636

The following are the results of the PLS Algorithm processing in the research model used are as follows:

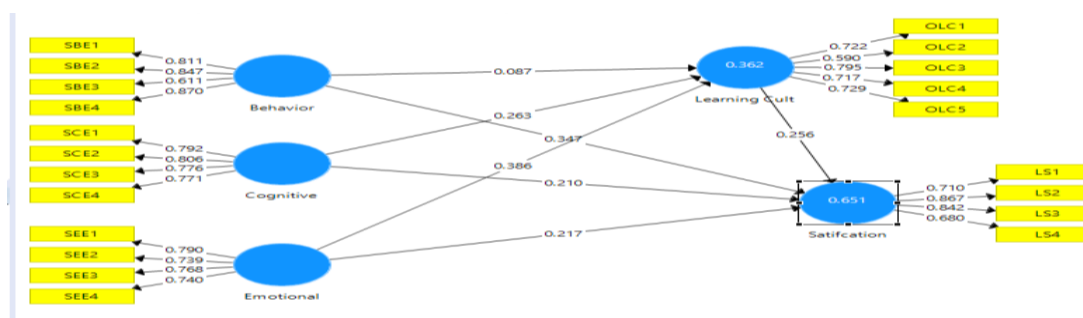


Figure 2

Path Coefficients in the table below contain the path coefficient values (the numbers are located in the original sample column). All path coefficients in this study are positive as based on the Path Coefficients table, the

researcher can test for each path with the results listed in the table below. A positive sign and p value less than 0.05 indicates that the independent variable has a positive effect on the dependent variable.

Table 4 Path Coefficient

H.	Influence Between Pathways	Beta (Original Sample)	Sign	Sample Mean	T-Statistic	P-value	Meaning
H <sub>1</sub>	Student behavior => organization learning culture	0,087	+	0,093	0,734	0,463	Student behavior has no effect organization learning culture
H <sub>2</sub>	Student behavior=> online learning satisfaction	0,347	+	0,344	3,683	0,000	Student behavior has positive effect online learning satisfaction
H <sub>3</sub>	Student cognitive => organization learning culture	0,263	+	0,270	2,379	0,018	Student cognitive has positive effect on organization learning culture
H <sub>4</sub>	Student cognitive =>online learning satisfaction	0,210	+	0,213	2,850	0,005	Student cognitive has positive effect online learning satisfaction
H <sub>5</sub>	Student emotional =>organization learning culture	0,386	+	0,386	3,320	0,001	Student emotional has positive effect organization learning culture
H <sub>6</sub>	Student emotional =>online learning satisfaction	0,217	+	0,222	2,773	0,006	Student emotional has positive effect online learning satisfaction
H <sub>7</sub>	organization learning culture=> online learning satisfaction	0,256	+	0,254	2,820	0,005	Organization learning culture has positive effect online learning satisfaction

Significant P-value (Sig.) At  $\alpha = 5\%$

For hypothesis number 1 student behavior engagement have effect to online learning satisfaction, the p value of 0.463 is more than 0.05 which means it no significant effect. Student involvement does not affect online learning, this is due to online learning that is carried study at home, student never interact with their teachers, friends and the school environment. Students tend to be passive, they doing any study process from home, only carry out learning at the time determined by the school, without interaction with teachers and friends like schools without being online (Chen & Jang, 2010; Roczen et al., 2014). For hypothesis number 2 and 3 student emotional and cognitive engagement, the p value is less than 0.05 which means it has significant effect, which means it has significant effect to online learning satisfaction. Emotional and cognitive behavior engagement are something that is needed by students, emotional and cognitive behavior engagement can influence the process of student online learning success. Without emotional and cognitive behavior engagement student will give up easily, do not have the motivation to learn, and are not good at focusing on learning material, even though the student is actually able to learn it (Dunn & Kennedy, 2019). High emotional and cognitive behavior engagement will give good output learning to students who excel and can improve their learning outcomes. Therefore it can be concluded cognitive and emotional engagement are important aspect that affects the success of students in online learning activity. Emotional and cognitive behavior actually has a role in shaping students' learning skills (Fredricks, Blumenfeld, & Paris, 2004).

Mediation (intervening) variables that theoretically affect the relationship between the independent and dependent variables become an indirect relationship. It can also be interpreted that the intervening variable is a variable that can weaken and strengthen the relationship between variables. According to Hair Jr. et al (2014) there are 2 (two) types of mediation, namely partial mediation and perfect mediation. Partial mediation occurs when the direct effect (independent variable => dependent variable) is significant and the indirect effect

(independent variable => mediation => dependent variable) is also significant. Meanwhile, perfect mediation occurs when the direct effect (independent variable => dependent variable) is not significant and the indirect effect (independent variable => mediation => dependent variable) is significant. The table above is the result of the test for hypotheses based on the P value that is smaller than 0.05 (marked with a red box), it can be concluded that organization learning culture partially mediates the effect of student cognitive engagement to the online learning satisfaction. Organization learning culture partially mediates the effect of student emotional engagement to the online learning satisfaction. Organization learning culture partially mediates the effect of student emotional engagement to the online learning satisfaction. This result in line with some researcher, that organizational learning culture strengthen the online learning process (Chen & Jang, 2010; Kuh, 2001; Li et al., 2020; Linnenbrink-Garcia & Pekrun, 2011).

Table 5 Specific Indirect Effect

H.	Influence Between Pathways	Beta (Original Sample)	Sign	Sample Mean	T-Statistic	P-value	Meaning
H <sub>8</sub>	Student behavior → organization learning culture → online learning satisfaction	0,022	+	0,024	0,030	0,456	Student behavior has no effect online learning satisfaction with organizational learning as mediating variable
H <sub>9</sub>	Student cognitive → organization learning culture → online learning satisfaction	0,087	+	0,094	1,868	0,042	Student cognitive has positive effect online learning satisfaction with organizational learning as mediating variable
H <sub>10</sub>	Student emotional → organization learning culture → online learning satisfaction	0,092	+	0,099	2,083	0,035	Student emotional has positive effect online learning satisfaction with organizational learning as mediating variable

#### IV. CONCLUSION, LIMITATION AND SUGGESTIONS

Based on research results and the discussion above that the impact of COVID-19 on the implementation of online learning at university, college can do well. COVID-19 has had a huge impact on education to break the chain of transmission the COVID-19 pandemic learning that it is done in class room is now being studied at houses with various uses applications such as teacher rooms, class rooms, zoom, google doc, googlefrom, or through groups whatsapp, line. Online learning will provide a wider opportunity to describe what will be taught. The lecturer must be able to choose and limit the extent of the scope of the material and what application is suitable for the material and learning methods used. Learning activities can work well and effective according to the lecturer's creativity in provide material and practice questions to students, of the practice questions done by students can be used for students' daily activity grades. Suggestion for future research and online learning study, the challenge for lecturers and students is indeed related to the use of learning technology which must be continuously improved in quality. Moreover, online learning content still needs to be improved to be more interactive so that students can be more involved in the learning process. The carrying capacity of technology also needs to be continuously improved, as are the facilities used by content providers. In this case lecturers must also be prepared with intense communication with students, various conversation channels such as WhatsApp, sms, telephone calls and video calls must continue to serve students in the midst of the current pandemic. With such a process expected to be able to develop the quality of learning. Besides that, it also needs the institutional capacity of lecturer and student digital literacy that must be developed. So at the end,

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