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New Normal: Learning from Home, the Availability of Information Technology and e-Learning Implementation as a Determinant of Accounting Students' Understanding

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ABSTRACT

This study aims to examines the mediating role of learning from home and the availability of information technology on the relationship between e-learning and accounting students' understanding during the COVID 19 Pandemic. The sample of this study consist of 413 respondents from 14 universities in Indonesia. The result of the study indicate that during the COVID 19 Pandemic, learning from home and availability of information technology were able to mediate the relationship between e-learning and accounting students' understanding in Indonesia. This study contributes in expanding the technology acceptance model theory in the context of COVID 19, and adding to the topics and theoretical approaches recommended by forum in the fields of accounting and education. It is also evaluating universities performance in implementing e-learning during COVID 19 Pandemic.

ABSTRAK

Penelitian ini menguji peran mediasi *learning from home* dan ketersediaan teknologi informasi pada hubungan *e-learning* terhadap pemahaman mahasiswa akuntansi selama masa pandemi COVID-19. Sampel yang digunakan dalam penelitian ini adalah mahasiswa akuntansi di 14 perguruan tinggi di Indonesia. Sejumlah 413 responden berkontribusi dalam penelitian. Hasil penelitian menemukan bahwa selama masa pandemi COVID-19, *learning from home* dan *availability of information technology* mampu memediasi hubungan *e-learning* dengan *accounting students' understanding* di Indonesia. Penelitian ini memperluas teori *Technology Acceptance Model* dalam konteks COVID-19, dan menambah topik serta pendekatan teoritis yang direkomendasikan oleh forum di bidang akuntansi dan pendidikan. Penelitian ini juga mengevaluasi kinerja perguruan tinggi yang menerapkan *e-learning* sebagai media pembelajaran selama masa COVID-19.

INTRODUCTION

A new strain of Corona virus has swept the world at the end of 2019. The virus is known as COVID-19. This virus is easily transmitted to humans and causing flu like sympthoms and pneumonia that at some point could endanger humans' life. Because its ability to transmit, World Health Organization has decided it as a pandemic. This pandemic has made some rapid changes in economy, health and education sectors.The Education sector is changing drastically and making it mostly online in order to cope with the pandemic situations (Almarzooq et al., 2020; Creţan & Light, 2020; Heyang & Martin, 2020; Kapasia et al., 2020; Krishnamurthy, 2020; Mhlanga & Moloi, 2020; Moorhouse, 2020; Nguyen et al., 2020; Ritter & Pedersen, 2020; Xue et al., 2020).

In ealy March 2020, as reported by Indonesian government, Indonesia has started to have active case of COVID19. As a response to the situation. Indonesian government then issuing some policies to cope with the rapidly changing environment. In education sector, online learning system is implemented. This policy is in line with the existing policies in South Africa to maximize digital-based learning facilities from elementary schools to tertiary institutions (Mhlanga & Moloi, 2020). Meanwhile, in India, it is implementing a learning system with a digital platform for undergraduate and postgraduate students (Kapasia et al., 2020). COVID-19 urges universities in Indonesia to accelerate the use of alternative methods to adjust the learning process. The use of e-learning is a solution and cannot be avoided during a pandemic (Moorhouse, 2020).

As mentioned by Chan & Ngai (2012), the e-learning is perceived effective in conducting online teaching and learning. Smith & Mitry (2008) revealed that human resource and the availability of information technology are the main factors in achieving the success of e-learning. E-learning implementation is differing in the rural and urban area. Meanwhile, the exact science is more difficult than the social science, so that the level of difficulity of the course is also become determinant factors in the success of e-learning implementation (Halawi et al., 2009).

This research examines the various impacts of government policies due to COVID-19 in the education sector. Universities as educational institutions must respond to this policy by implementing learning from home through online

learning methods which must be supported by the availability of adequate information technology (Pavel et al., 2015; Talebian et al., 2014) and the application of e-learning well (Favale et al., 2020; Gel et al., 2014). In addition, this study has a novelty compared to other studies. In China, education policies due to COVID-19 are handled based on local wisdom applied by the centralized and integrated leadership of the communist party (Xue et al., 2020). Whereas in South Africa during the lockdown period, it took advantage of the sophistication of products from the industrial revolution 4.0 in distance learning (Mhlanga & Moloi, 2020).

Krishnamurthy (2020) provides a basic framework for understanding the transformation of distance teaching by introducing fundamental changes in universities, students and the business world. Even in some countries there are only a few ideas for education about the impact of COVID-19. Romania with its labor and political impacts (Crețan & Light, 2020), health impact in Vietnam (Hoang et al., 2020), corporate business impacts in Denmark (Ritter & Pedersen, 2020), and even education impacts arts in China (Heyang & Martin, 2020). In contrast to others, this research offers survey-based field studies with a quantitative approach. In addition, this study aims to examine learning from home, the availability of information technology, and the application of e-learning as determinants of accounting students' understanding in Indonesia.

The benefit of this research theory is to further review the usefulness of the technology acceptance models theory in the context of COVID-19 and its theoretical approaches recommended by forums in the fields of accounting and education. While the practical benefits of this research can be used as an evaluation of learning methods in the institutions that apply the use of e-learning as a basis for student learning on campus.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Technology Acceptance Model

To measure students' understanding in accounting, a technology acceptance model is used in this study. Davis (1989) explains that the technology acceptance model is one of the first models that combines human cognitive factors that can affect technology acceptance in various jobs. Extended by Davis, et al. (Davis et al., 1989) states that the technology acceptance model is a theoretical approach that models the

process of acceptance and use of new technology by various groups. Meanwhile, Fishbein & Azjen (1975) describe the technology acceptance model as a theory designed to analyze and anticipate intentions and predict a person's behavior based on subjective attitudes and norms that refer to belief without motivation.

Two elements that make up the technology acceptance model according to Davis, et al. (Davis et al., 1989) namely perceived usefulness and perceived ease of users. Perceptions of usefulness focus on the level of user confidence that using information technology will improve performance. Meanwhile, the perceived ease of users is the level of user confidence that using information technology can make work easier. Several studies that apply technology acceptance models to the 4.0 industrial revolution (Hu et al., 1999; Svendsen et al., 2013; Taherdoost, 2018; Wentzel et al., 2013). In addition, the technology acceptance model also contributes to education (Teo, 2012; Walker et al., 2020).

Learning from Home and Accounting Students' Understanding

COVID-19 has urged universities in Indonesia towards comprehensive e-learning implementation. E-learning trough online learning will certainly lead students to carry out learning from home activities in order to achieve the effectiveness of teaching and learning activities during a pandemic. The study conducted by Kapasia, et al. (Kapasia et al., 2020) found that there are still big challenges for students who use information technology in learning. Especially for accounting students who carry out practicum activities or case studies with a certain level of difficulty, it will require extra effort in online learning (Bible et al., 2008).

In line with Simkin & Kuechler, research by Marzuki, et al. (2020), the study found that students could not easily understand the application role of mobile technology when understanding accounting. Meanwhile, Malan (2020) points out that the impact of COVID-19 has the potential to convert accounting modules into part of online learning. In addition, the accounting research forum recommends developing research based on the impact of COVID-19 (Rinaldi et al., 2020). This study believes that the application of good e-learning will have an impact on improving the learning from home process, and ultimately will have an impact on students' understanding in the accounting field.

H_1: E-learning has an effect on learning from home

H_2: Learning from home affects accounting student' understanding

The Availability of Information Technology and Understanding of Accounting Students

The development of the internet can be used by Indonesian universities as a means of online learning activities. In Italy the internet has a major role in supporting online learning (Favale et al., 2020), even in Canada and China have developed online learning before the arrival of COVID-19 (Gel et al., 2014; Xiangqian & Fuqing, 2012). Information technology that is supported by adequate internet services can improve innovative methods based on student involvement, interest and motivation of lecturers in communication and information exchange efforts during learning (Pavel et al., 2015).

Talebian, et al. (2014) stated that the current information technology and learning methods cannot be separated. The existence of COVID-19 encourages the government in Indonesia to make policies that result in educational institutions, especially in universities, to take advantage of information technology as the main means of optimizing the learning process. The use of information technology is a hope for universities to rise and survive with the COVID-19 in the field of education (Mhlanga & Moloi, 2020). However, adequate information technology is still difficult to apply to learning in certain fields such as accounting subjects (Marzuki et al., 2020; Rinaldi et al., 2020). This study believe that the optimal use of e-learning will affect the availability of information and technology, and an adequate level of information technology will have an impact on students' understanding in accounting.

H_3: E-learning affects the availability of information technology

H_4: The availability of information technology affects accounting students' understanding

E-learning and Accounting Students' Understanding

COVID-19, which is considered to have many negative impacts, can actually provide opportunities for developed and adaptive countries. Singapore has a high infection rate but has a low mortality rate due to the government's success in maximizing effective fiscal, operational and political policies (Woo, 2020). In Europe, Switzerland implements a micropoilytic policy to prevent the

rapid spread of COVID-19 (Wolfe, 2020). Even in Canada, which is known as one of the fastest country in responding to the issue of COVID-19, it has a policy of handling exclusively at the provincial, federal and territorial levels (Lee et al., 2020). Indonesia with an education policy that applies an online learning pattern must take advantage of the use of e-learning as a learning process. This policy is in line with South Africa which maximizes the role of applications based on the 4.0 industrial revolution to support learning in higher education (Mhlanga & Moloi, 2020), although this is still in the process of development and adjustment. Especially in the field of accounting, understanding accounting subjects obtained from the application of e-learning is still a challenge for some universities in Indonesia (Marzuki et al., 2020). This study believes that the maximum application of e-learning will have an impact on students' understanding in accounting through learning from home and the availability of technology and information.

H_5: The implementation of e-learning affects accounting students' understanding through learning from home

H_6: The implementation of e-learning affects accounting students' understanding through availability of information technology

METHOD

Research Design

This study uses a quantitative approach to test the learning from home variable, IT availability, and the use of e-learning on the understanding of accounting students during the COVID-19 period. a survey questionnaire was developed to measure relevant constructs. The data quality test was used to ensure the validity and reliability of the data. This study uses the evaluation of the outer model through confirmatory factor analysis (CFA) with the aim of analyzing the level of validity and reliability of latent constructs. The validity used in this study is construct validity, predictive validity, and content validity (Barclay, D., Thompson, R., dan Higgins, 1995; Chin, 2010; Junjunan, 2018). While the reliability used in this study is indicator reliability and composite reliability (Chin, 1998; Fornell & Larcker, 1981; Hair et al., 2018; J. Nunnally & Bernstein, 1994).

Sample

The sample in this study were middle and upper semester accounting students at several

universities in Indonesia, especially in Java. Samples were taken randomly through a survey conducted by sending structured questionnaires online. The respondents were then asked to complete the entire questionnaire. A total of 413 questionnaires were returned within two months and then analyzed further.

Operational Definition and Measurement of Variables

The variables to be measured include learning from home, IT availability, e-learning, and understanding of accounting. Learning from home is a teaching and learning activity carried out by lecturers and students without face-to-face meetings in class. Meanwhile, the availability of IT is a supporting facility and infrastructure in the process of learning activities (Talebian et al., 2014), which can be utilized online and face-to-face. Meanwhile, e-learning is an online learning method developed through an internet network-based software platform (Halawi et al., 2009). In addition, the understanding of accounting students in this study is the level of student knowledge of accounting courses taken during the COVID-19 period. Overall, the variables used are measured with a Likert scale.

Data Collection and Instruments

The survey was conducted by sending a structured questionnaire online. Survey participants were asked to forward the questionnaire to other accounting students who also used e-learning. The respondents were then asked to complete the entire questionnaire. The indicators used have been adjusted especially from the existing scale. Items for learning from home (9 items on a 5-point scale) were used to measure the level of effectiveness of distance learning. The availability of information technology (6 items with a 5-point scale) developed by Talebian, et al. (Talebian et al., 2014) is used to measure the level of information technology support in the online learning process. E-learning (6 items with a 5 point scale) developed by Halawi, et al. (Halawi et al., 2009) was used to measure the effectiveness of the application of e-learning during COVID-19. And accounting comprehension (11 items on a 5-point scale), developed by Bible, et al. (Bible et al., 2008) was used to measure the level of understanding of accounting courses during lectures during the COVID-19 pandemic.

Data Analysis Technique

Data were analyzed using confirmatory factor analysis (CFA).

CFA was used to test factor models for construct validation and construct measurement (Jöreskog, 1969). In addition, CFA provides a way to create a series of indicators that are interrelated, by fulfilling one of the conditions for construct validity. Convergent validity is accepted if the item loads strongly with a factor> 0.50. Meanwhile, discriminant validity will be achieved if each item contains a stronger load on the related factor than the other contents. Indicators with a factor of 0.30 and a difference of 0.10 between their loading on other factors are examined to determine whether the indicators conceptually measure other factors (Messick, 1990, 1995). Reliability was tested with Cronbach alpha criteria> 0.70 (Cronbach, 1951; J. C. Nunnally, 1978) and composite reliability 0.70 (Chin, 1998, 2010). Furthermore, learning from home, IT availability, e-learning, and understanding of accounting students will be tested using path analysis. This analysis shows the relationship between exogenous and endogenous constructs through mediating variables (Baron & Kenny, 1986; Fanshel, 1983; MacKinnon, 2012). The hypothesis is accepted if the variable probability value is smaller than 0.50 (p <0.50).

RESULT AND DISCUSSION

Respondent Profile

Table 1 presents the demographic profile of the respondents. A total of 413 accounting students in Indonesia, especially those on Java, participated in the research. The majority of student respondents are female at 80.9% and dominated by semester 6 at 74.6%. In addition, as many as 14 universities in Indonesia, especially those scattered on the island of Java, became respondents in this study.

Instrument

The results of the confirmatory factor analysis are shown through the value of convergent validity, discriminant validity, and reliability values. Based on Table 2, the loading factor value of all instruments is greater than 0.70. In addition, the average variance extracted (AVE) value of each variable has a value greater than 0.50. It can be concluded that each instrument from the research variables of accounting students' understanding, availability of information technology, e-learning, and learning from home meets the criteria of convergent validity.

Table 1. Demographic Profile of Respondents

Characteristics	N	%
Gender		
Male	79	19,1
Female	334	80,9
Semester		
6th semester	308	74,6
8th semester	105	25,4
University		
IAIN Madura	1	0,2
STIE Mahardhika Surabaya	1	0,2
UIN Sunan Ampel Surabaya	15	3,6
Airlangga University	4	1,0
Muhammadiyah University of Yogyakarta	3	0,7
Muhammadiyah University of Gresik	22	5,3
Muhammadiyah University of Jakarta	14	3,4
Muhammadiyah University of Lamongan	33	8,0
Muhammadiyah University of Malang	27	6,5
Muhammadiyah University of Sidoarjo	229	55,4
Muhammadiyah University of Surabaya	45	10,9
Muhammadiyah University of Malang	1	0,2
PGRI Madiun University	17	4,1
UPN Veteran East Java	1	0,2

Source: Data Processed (2021)

Table 2. Outer Loading Value

Instrument	Accounting students' understanding	Availability of information technology	E-learning	Learning from home	Critical value	Model evaluation
acquisition	0,777				0,70	Good
consignment	0,749				0,70	Good
costing	0,756				0,70	Good
financial statements	0,707				0,70	Good
investation	0,838				0,70	Good
long term debt	0,859				0,70	Good
short term debt	0,851				0,70	Good
stock	0,815				0,70	Good
adequate		0,866			0,70	Good
amenities		0,872			0,70	Good
benefits		0,807			0,70	Good
chat			0,814		0,70	Good
discussion			0,780		0,70	Good
tutorial			0,765		0,70	Good
evaluation				0,814	0,70	Good

Instrument	Accounting students' understanding	Availability of information technology	E-learning	Learning from home	Critical value	Model evaluation
reference				0,906	0,70	Good
theory				0,847	0,70	Good
Average Variance Extracted (AVE)	0,633	0,720	0,618	0,734		

Source: Data Processed (2021)

Table 3. Cross Loading Value

Cross Loading	Accounting students' understanding	Availability of information technology	E-learning	Learning from home
acquisition	**0,777**	0,240	0,213	0,458
consignment	**0,749**	0,277	0,274	0,387
costing	**0,756**	0,260	0,255	0,422
financial statements	**0,707**	0,321	0,284	0,381
investation	**0,838**	0,214	0,268	0,524
long term debt	**0,859**	0,338	0,308	0,489
short term debt	**0,851**	0,349	0,296	0,478
stock	**0,815**	0,216	0,306	0,486
adequate	0,302	**0,866**	0,434	0,315
amenities	0,262	**0,872**	0,483	0,327
benefits	0,320	**0,807**	0,431	0,340
chat	0,208	0,423	**0,814**	0,271
discussion	0,296	0,337	**0,780**	0,379
tutorial	0,306	0,479	**0,765**	0,316
evaluation	0,458	0,241	0,288	**0,814**
reference	0,514	0,361	0,378	**0,906**
theory	0,496	0,379	0,380	**0,847**

Source: Data Processed (2021)

Based on table 3 above, the cross-loading value of each instrument is greater than the value of 0.70. Meanwhile, the square root value of the AVE constructs is greater than the correlation between latent constructs shown in Table 4 Fornell-Larcker Criterion. Thus, it can be concluded that each instrument from the research variables of accounting students' understanding, availability of information technology, e-learning, and learning from home fulfills the criteria for discriminant validity.

Table 5 shows that the Cronbach's alpha value for each variable has a value greater than the value of 0.70, except for the e-learning variable.

Table 4. Fornell-Larcker Criterion

Fornell-Larcker Criterion	Accounting students' understanding	Availability of information technology	E-learning	Learning from home
Accounting students' understanding	0,796			
Availability of information technology	0,347	0,849		
E-learning	0,346	0,530	0,786	
Learning from home	0,572	0,386	0,410	0,857

Source: Data Processed (2021)

Table 5. Construct Reliability and Validity Value

Variable	Cronbach's Alpha	Critical value	Model evaluation	Composite Reliability	Critical value	Model evaluation
Accounting students' understanding	0,917	0,70	Excellent	0,932	0,70	Excellent
Availability of information technology	0,805	0,70	Good	0,885	0,70	Good
E-learning	0,692	0,70	Fair	0,829	0,70	Good
Learning from home	0,818	0,70	Good	0,892	0,70	Good

Source: Data Processed (2021)

In addition, the results of the analysis also show that the composite reliability value of each variable is greater than the value of 0.70 which means that each research variable meets the reliability criterion and is feasible for further analysis.

Path Analysis

Based on the objectives and specifications of the study, testing was carried out in stages using SmartPLS to obtain a fit test result. Following are the results of the conceptual model of this study. Based on figure 1, it shows that the R-square value of accounting students' understanding is 0.346 which means that the influence of learning from home and availability of information technology is 34.6% and the remaining 65.4% is influenced by other variables outside the model. Meanwhile, the magnitude of the effect of E-learning on the availability of information technology and learning from home were 28.1% and 16.8%, respectively.

Findings

As shown in Figure 1, path analysis is used to test the research hypothesis. The t-statistics criterion and the probability value are used to analyze the influence of exogenous variables on endogenous variables, as well as the effect of research mediation.

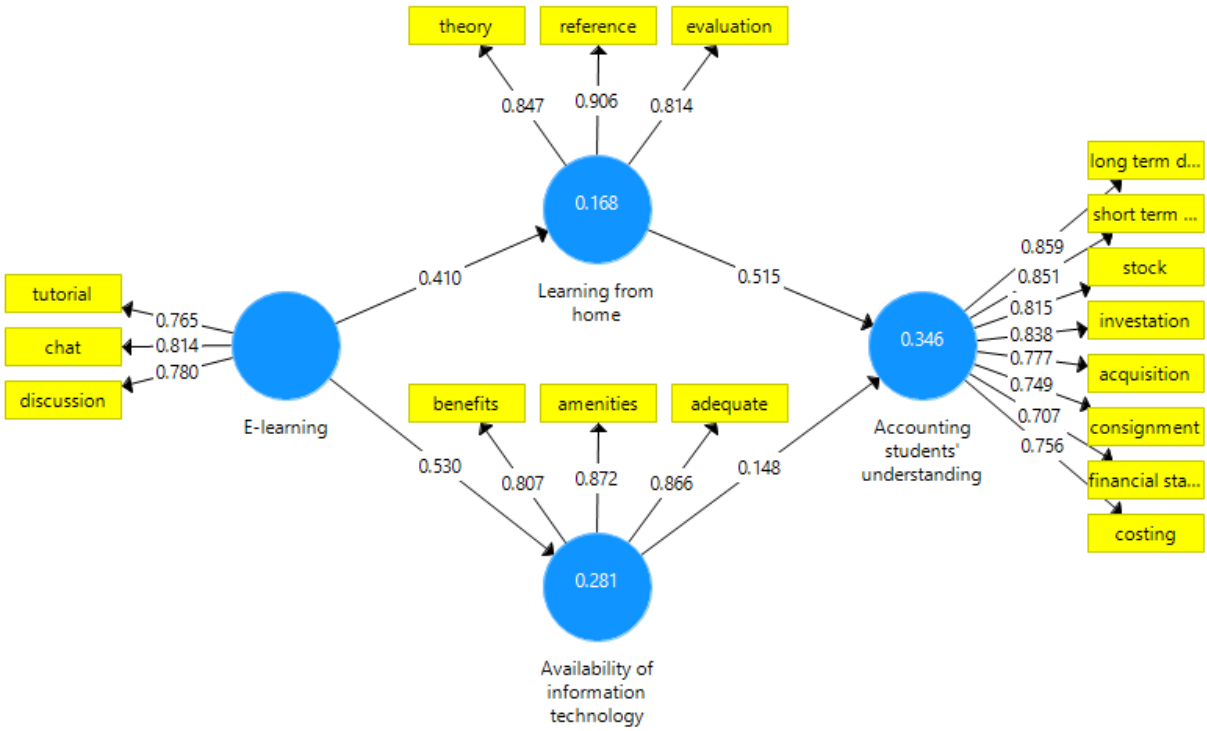

Figure 1. Theoretical Model of the Indirect Effect E-learning on Accounting students' understanding through Learning from home and Availability of information technology
Source: Data Processed (2021)

Table 6. Path Analysis Result

Construct	Coef.	t-statistics	P Values
E-learning -> Learning from home (H_1)	0,410	6,849**	0,000*
Learning from home -> Accounting students' understanding (H_2)	0,515	9,797**	0,000*
E-learning -> Availability of information technology (H_3)	0,530	11,004**	0,000*
Availability of information technology -> Accounting students' understanding (H_4)	0,148	2,662**	0,008*
E-learning -> Learning from home -> Accounting students' understanding (H_5)	0,211	5,105**	0,000*
E-learning -> Availability of information technology -> Accounting students' understanding (H_6)	0,078	2,526**	0,012*

*p < 0,05; **t-statistics > 1,96
Source: Data Processed (2021)

Based on table 6, the results of the path analysis show that the overall hypothesis is accepted. The effect of the mediation of learning from home and the availability of information technology on the relationship between e-learning and accounting students' understanding is indicated by the t-statistics value of 5.105 and 2.526. Both of these values are greater than the t-table value of 1.96 so that these results support the research hypothesis (H_5 & H_6). Meanwhile, the direct effect is shown by the t-statistics value of 6,849 (H_1); 9,797 (H_2); 11,004 (H_3); and 2,662

(H_4). The four direct effects have a t-statistics value that is greater than the t-table (t-statistics> 1.96), thus these results support the first, second, third, and fourth research hypotheses.

Discussion

This study examines the mediating effect of learning from home variable and availability of information technology on the relationship between e-learning and accounting students' understanding. Several findings from previous research that adopted the effect of e-learning variables on information technology variables (Gel et al., 2014; Xiangqian & Fuqing, 2012) in several universities (Smith & Mitry, 2008; Talebian et al., 2014) have been confirmed. The results of this study support the direct effect of the use of e-learning on learning from home (H_1), which in the end, learning from home has a direct effect on accounting students' understanding (H_2). The results also show that the use of e-learning affects the availability of information technology (H_3) and ultimately the availability of information technology has a direct effect on accounting students' understanding (H_4). In addition, the results of the study found that learning from home (H_5) and availability of information technology (H_6) could mediate the relationship between e-learning and accounting students' understanding.

In line the study by Marzuki, et al. (Marzuki et al., 2020), students can apply cellular technology in understanding accounting (H_6). This shows that during the COVID-19 period students can manage their study time properly by utilizing existing technology, besides those students also use good references from adequate facilities such as the availability of e-journals, e-books, or e-modules. An important factor that supports the results of the research is that respondents in this study are millennial students who have a fast responsiveness to changes in learning patterns that were originally carried out in class to online learning (Favale et al., 2020). While the understanding of cognition and affective from millennial students is more appropriate for online learning (Halawi et al., 2009), thus millennial students currently prefer online learning and it is easier to understand accounting (Mhlanga & Moloi, 2020; Moorhouse, 2020).

During the COVID-19 period students can learn independently quickly through material prepared by lecturers, then students are also able to complete the lecture assignments

given by understanding the material, developing and finding solutions through online references and discussions during online learning (Halawi et al., 2009; Kapasia et al., 2020). More than that, efficient learning can be achieved if students take online lectures with the group method, discuss and solve cases with the theory gained during lectures, and there is an evaluation of appropriate and effective learning (Almarzooq et al., 2020; Nguyen et al., 2020). Several external factors that support the results of this study include adequate facilities prepared by universities for online learning (Favale et al., 2020; Gel et al., 2014), the fulfillment of ideal facilities that contain online learning application platforms (such as moodle, chamilo, googleclassroom). Available internet quotas, online tutorial-based learning materials, and various online learning methods that are not monotonous (Chan & Ngai, 2012; Hu et al., 1999; Moorhouse, 2020; Shin, 2009). In addition, internal factors that support the results of this study are that millennial students are able to keep up with developments and changes in technology that are very fast.

Consistent with the technology acceptance model (Walker et al., 2020), availability of information technology has a significant effect on accounting students' understanding (H_4). These results are due to the rapid development of technology and students can access various reference sources for accounting subjects (Malan, 2020; Rinaldi et al., 2020; Svendsen et al., 2013; Wentzel et al., 2013). In fact, the intensity of the use of cellphones and laptops shows that students today really need online-based references rather than printed references such as books and other teaching materials. This is because online references are easier and faster to access (Halawi et al., 2009; Kapasia et al., 2020; Smith & Mitry, 2008). The implication of the results of this study can be used as material for evaluating several universities in Indonesia regarding what factors can be applied and beneficial to the learning process during the COVID-19 period so that the learning process continues to run effectively and on target.

CONCLUSIONS, IMPLICATIONS AND LIMITATIONS

This study develops the technology acceptance model developed by Walker, et al (Walker et al., 2020) in the context of the COVID-19 pandemic. The research findings indicate that learning from home and availability of information technology can be a mediating role for the

relationship between e-learning and accounting students' understanding of several universities in Indonesia. The findings also show that the level of effectiveness of using e-learning carried out during COVID-19 depends on the readiness of universities and students in optimizing the use of information technology in the learning process, especially in accounting. We believe that more research is needed to develop an understanding of the online-based learning process and its role in general for both social and exact-based subjects.

A limitation of this study is the relatively small sample size of 413 respondents was used. In addition, another potential limitation of this study is the data collected from several universities in Indonesia only on the island of Java. Higher education management must be consistent in updating and increasing the availability of information technology because it has been shown to increase understanding of accounting learning in universities throughout Indonesia.

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