

DETERMINATION OF ONLINE LEARNING WITH IT AVAILABILITY AS MODERATING VARIABLE

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Abstract

This study aims to examine the effect of hybrid learning implementation, attitudes and acceptance behavior of accounting study students on online learning with introductory accounting courses supported by the availability of technology carried out during the covid-19 pandemic. This research method used a quantitative approach with primary data obtained through data collection techniques for distributing questionnaires to a sample of students. The data was tested using the SEMPLS 3.0 application. The results showed that the implementation of hybrid learning had an effect on online learning in introductory accounting courses, which was supported by the availability of technology. However, the results of the research on the attitude and acceptance behavior of accounting study program students did not affect online learning in introductory accounting courses which were supported by the availability of technology.

Keywords : Hybrid Learning; Acceptance of Accounting Student ; Theory Acceptance Model (TAM); Online Learning in Accounting Courses and Technology Availability.

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Introduction

The rapid development of technology has the potential to be positive for all aspects of human life, both in the fields of politics, economics, art and culture, including the field of education. The availability of technology in the world of education is a medium for delivering learning materials optimally. Technology facilitates the process of distance learning that is not limited to a specific classroom. The use of technology is a new innovation in learning methods (Almeida & Simões, 2019) namely distance learning and combined learning (hybrid learning).

Innovations in technological developments in the world of education include the online learning system. Online learning is a learning system using information technology. The interaction between students and teachers in online learning is mediated by technology using platform in the internet network Online. Online learning utilizes multimedia technology, video, text Online animations, voicemails, E-mail and video streaming online (Kuntarto, 2017). The purpose of online learning is to open access to learning for everyone with a wide and unlimited scope in the scope of the classroom.

At the end of 2019, World Health Organization (WHO) announced its discovery Coronavirus Diseases 2019 (Covid-19) in Wuhan City, Hubei Province (Arnani, 2020). Covid-19 is a new type of disease with its spread so fast, causing a global pandemic. This phenomenon causes a health crisis around the world, of course it also has an impact on the economy, education and other sectors. To minimize the spread of the virus, the

government has set regulations to restrict activities that have the potential to cause crowds, implement health protocols and provide vaccines regularly to the public. Supporting the government's efforts in tackling the Covid-19 pandemic, various public spaces, educational institutions or industries have limited their operational activities so that some activities are carried out periodically. The activity was carried out indoors (stay at home), work from home or carried out through the internet network. This triggered the change of the face-to-face learning system to online learning. Such rapid change creates sharing obstacles. Research (Rinaldi et al., 2020) stated that online learning cannot improve the understanding of learning science, therefore now the learning system has changed to a learning system hybrid learning (Sumandiyar et al., 2021).

Hybrid learning combining two learning systems based on face-to-face and online learning (Boyle et al., 2003). Implementation of the learning system hybrid learning As a response to the Covid-19 pandemic by utilizing internet-based information technology. Hybrid learning integrating online learning exposure supported by the availability of technology as a support without reducing the intensity of face-to-face learning. Application hybrid learning in each educational institution is adjusted to conditions and needs. Characteristic hybrid learning which combines conventional and online learning methods, is an effective way to convey knowledge optimally. Implementation hybrid learning influenced by the availability of facilities and infrastructure including laptops, computers and internet networks. In addition to adequate facilities and infrastructure, the professionalism of teachers and the ability of students to use technology are benchmarks for successful learning and understanding of science.

As the purpose of learning, the understanding of science is related to learning methods and students' acceptance in using information technology. The availability of information technology and the internet improves the quality of learning understanding (Pavel et al., 2015). The understanding of accounting study program students towards the introductory accounting lecture material is measured by the ability of students to analyze the recognition, recording, assessment and presentation of each element of financial statements (Rukmiati Rumadan, 2018).

Acceptance of information technology is measured through the behavioral theory approach. Behavioral theory acceptance of the use of information technology systems is tested with a theoretical approach Technology Acceptance Model (Davis, 1985). Technology Acceptance Model It is a development of the theory and model of behavioral information systems, namely Theory of Reasoned Action (TRA) by (Fishbein & Ajzen, 1977). Acceptance factors for the use of information technology systems based on theory Technology Acceptance Model (TAM) is the perception of the usefulness of technology (perceived usefulness) and perception of ease of using technology (perceived ease of use). The perception of convenience and usefulness can increase interest in the actual use of technology through an attitude towards interest in using technology (Anawati, 2013).

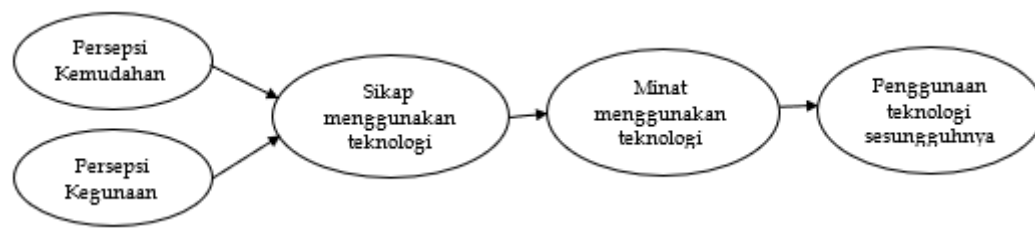


Figure 1. Construct Technology Acceptance Model (TAM)

The perception of benefits and the perception of convenience have a significant effect on students' interest in implementing online learning. As the research (Istiyana & Garment, 2020) which states that Generation Z students understand technology better and like online learning with visual methods. Other research conducted by (Tita Nawangsari, 2020) stated that learning from home and the availability of IT affect the understanding of learning in the introductory accounting course.

The acceptance of technology in the hybrid learning method in online learning carried out during the Covid-19 pandemic needs to be researched to test the acceptance and attitude of accounting study program students towards the implementation of the combined learning method, precisely in introductory accounting courses with technology availability facilities.



Figure 2. Conceptual framework

Methods

This study uses a quantitative approach. Quantitative research uses data that can be quantitatively processed using statistical techniques (Ansari, 2019). The form of research in this research is a survey research that uses primary data in the form of an online structured questionnaire with variables that are measured and tested using a numerical scale using the application statistical procedure Partial Least Square (PLS). The Likert scale is indicated by the numbers 1 – 5, where the number 1 indicates the lowest level of disagreement and the number 5 indicates the highest level of agreement (Abdullah, 2015).

The population in this study is students of the accounting study program, faculty of business, law and social sciences, University of Muhammadiyah Sidoarjo for the academic year 2020 – 2021. The sampling technique used by the researcher is a simple random sampling technique. The number of samples used in this study amounted to 80 students representing several classes.

Data analysis techniques used in quantitative research. Structural testing using the smartPLS 3.0 application consists of designing an outer model and an inner model. The measurement model (outer model) consists of validity test and reality test while the structural model consists of determinant coefficient and path coefficient.

The validity test using Partial Least Square consists of two types, namely convergent validity and discriminatory validity. Convergent validity analysis means that an indicator represents and underlies a latent variable. The convergent validity analysis is determined by the Average Variance Extraced (AVE) with a loading factor value of > 0.5 , then it is declared convergent and vice versa.

The validity test of discrimination is used to test the correlation of two different instrument constructs. The validity test of discrimination can be tested using two methods, namely using a latent vertical correlation with a square root Average Variance Extraced (AVE) and Cross loading with a loading factor value of > 0.5 and higher than other constructs (Ghozali, 2014).

Reliability tests are used to test the consistency of measuring instruments to measure a concept (Hidayat, 2018). The reliability test is used as a tool to measure the consistency of respondents answering questions in the questionnaire. Reliability tests can be tested using two methods, namely Cronbach Alpha and Composite Reliability. Reliable data has value Cronbach Alpha > 0.6 (Leguina, 2015) and value Composite Reliability 0.7 .

The inner model or the so-called structural model is a measurement of the structural model between latent variables consisting of a determinant coefficient test (R^2). The hypothesis test uses a comparison of the coefficient path value with the T table. The hypothesis is stated to be very significant if the T statistic $>$ T table with a degree of freedom of 1%. Meanwhile, if the T statistic $>$ T table with a degree of freedom of 5%, the hypothesis is declared significant and the T statistic $>$ T table with a degree of freedom of 10%, the hypothesis is declared weak.

Result and Discussion

Descriptive Analysis

The number of respondents in this study is 80 people who are male respondents, 10 male respondents with a percentage of 12.5% and 70 female respondents with a percentage of 87.5%.

Table 1. Respondent characteristics by gender

It	Gender	Sum	Presented
1	Men	10	12,5%
2	Woman	70	87,5%

This study was dominated by respondents with an age range of 17 – 20 years with a percentage of 78.75% and 21 – 30 years old with a percentage of 21.25%.

Table 2. Characteristics of respondents by age

It	Gender	Age	Presented
1	Men	17 - 20	78,75%
2	Woman	21 - 30	21,25%

Measurement Model (Outer Model)

The measurement model (outer model) is a model that describes the relationship between latent variables and research indicators. The outer model tests the validity and reliability of the research data.

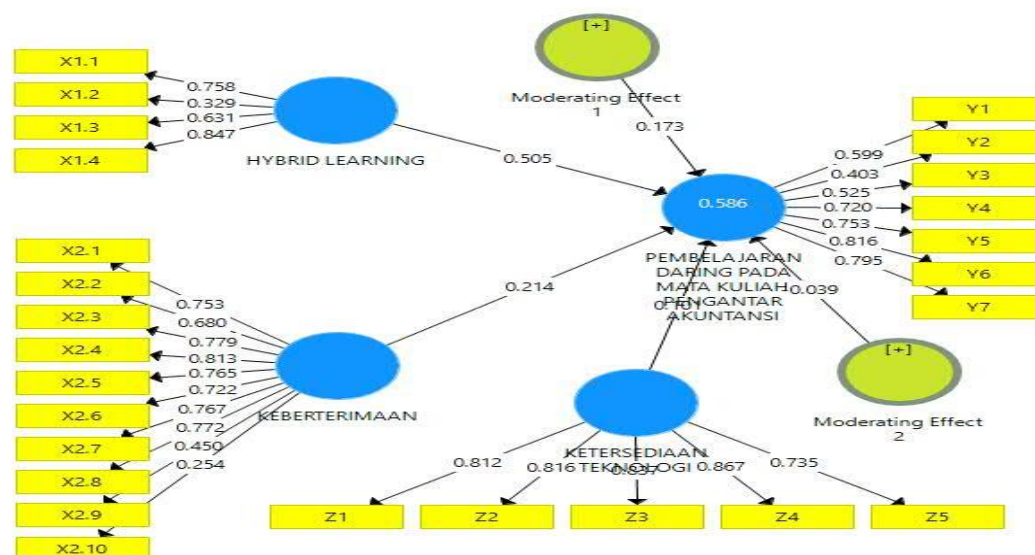
a. Validity Test

This study tested the validity of the indicators of the research variables totaling 26 items. The test was carried out by a *convergent validity test* to measure the amount of correlation between the construct and the latent variable with the provision of a correlation value of >0.70 , then it was declared valid.

Figure 3. Outer Scheme Before Elimination

The results of data processing on the SmartPLS 3.0 application are known that there are several invalid indicators with an outer loading value of < 0.7 . Indicators that are declared invalid must be excluded from the data, including variable indicators X1.2, X1.3, X2.6, X2.9, X2.10, Y1, Y2, Y3. After elimination and second calculation, there are invalid indicators to be eliminated again, namely the X2.7 variable indicator with a value of 0.695 and the Z5 variable indicator with a value of 0.690.

The variable indicators on the questionnaire items were declared valid totaling 16 items representing the category of independent variable one (X1) *Hybrid Learning* amounting to 2 items, the independent variable 2 (X2) *Acceptance* amounting to 6 items, the dependent variable (Y) *Online Learning in the Introduction to Accounting Course* amounting to 4 items and the moderation variable (Z) *Technology Availability* amounting to 4 questionnaire items. So that the results of data processing are as follows:



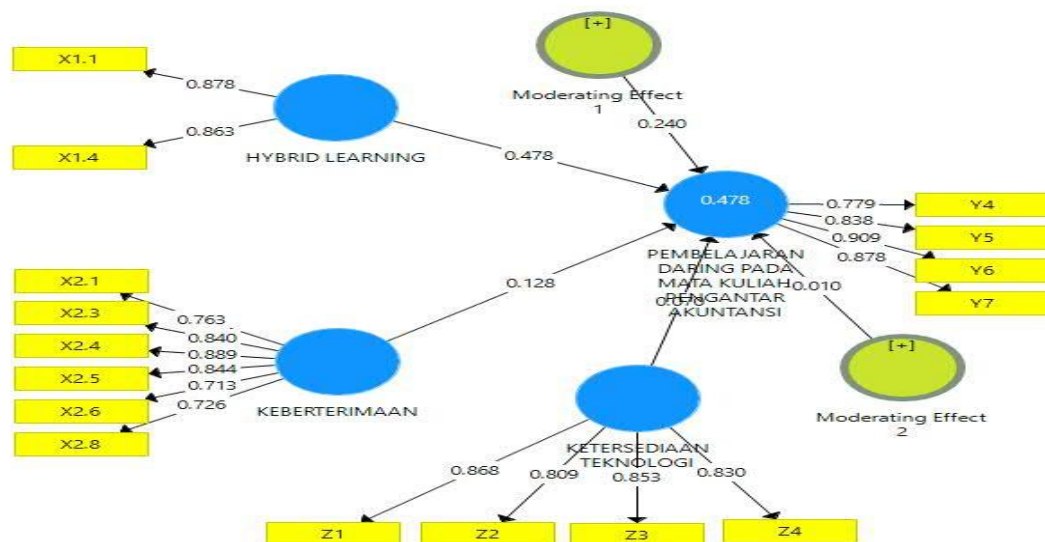


Figure 4. Outer Scheme After Elimination

After data processing with a *convergent validity* test to find out the variables that meet the requirements of valid indicators, a *discriminant validity* test is carried out. The *discriminant validity* test is carried out by comparing the loading value of the intended construct must be greater than the loading value of other constructs. After that, an *Average Variance Extracted* (AVE) test was carried out. The validity of discrimination is declared good if the AVE value > 0.5 and is less than the root value of AVE. If this is met, then the data in the study is declared valid and has good validity of discrimination.

Table 3. AVE and AVE Roots

	AVE	Up to AVE
X1	0.758	0.862
X1*Z	1.000	1.000
X2	0.638	0.913
X2*Z	1.000	1.000
And	0.727	0.914
With	0.706	0.906

Table 3. AVE and AVE Roots

	X1	X2	With	X1. With	X2. With	And
X1	0,870					
X2	0,254	0,799				
With	0,181	0,591	0,840			
X1,Z	0,436	-0,162	0,024	1,000		
X2,Z	-0,181	-0,152	-0,013	-0,033	1,000	
And	0,642	0,249	0,239	0,456	-0,126	0,852

In the discrimination validity test, the square root value of AVE in each latent variable is greater than the correlation value between the latent variable and other variables, This means that each construct in this study meets the requirements of good discrimination validity,

b. Reliability Test

The reliability test aims to test the reliability or consistency of the research data, the reliability test uses two ways, namely using *Cronbach alpha* and *Composite reliability*,

Value *Cronbach alpha* must be greater than or equal to 0.6 stating intermediate reliability (Hair et al., 2016) Value *Composite reliability* greater than 0.7.

Tabel 4. Cronbach Alpha dan Composite Reliability

Variable	Cronbach Alpha	Composite Reliability	Result
X1	0,680	0,862	Reliable
X2	0,890	0,913	Reliable
With	0,864	0,906	Reliable
X1,Z	1.000	1.000	Reliable
X2,Z	1.000	1.000	Reliable
And	0,874	0,914	Reliable

Struktural Model (Inner Model)

The structural model (inner model) is a model that describes the relationship between research constructs. The inner model tests the determination coefficient and tests the research hypothesis.

a. Coefficient of Determination Test

The determination test is a test of the influence of the independent variable (X) on the dependent variable (Y). The determination test was carried out by looking at the magnitude of the R^2 value (Variant analysis) by Bootstrapping.

Table 5. Reliability Test Results

Variable	R Square	R Square Adjust
Online Learning in the Introduction to Accounting Course (Y)	0,478	0,433

The contribution of the variability of the Online Learning variable in the Introduction to Accounting (Y) Course was 47.8% with the remaining 52.2% influenced by the contribution of other variables.

b. Uji Hipotesis

The Hypothesis Test is carried out using the *Boostrapping feature*. *Boostrapping* is done by comparing the T-value of the statistics with the T-value of the table. If the T-statistic is greater than the T-table then the hypothesis is accepted, and vice versa if the T-statistic is smaller than the T-table then the hypothesis is rejected with a significant value of p-values of 0.05 or 5% and a t-statistic value of > 1.96 .

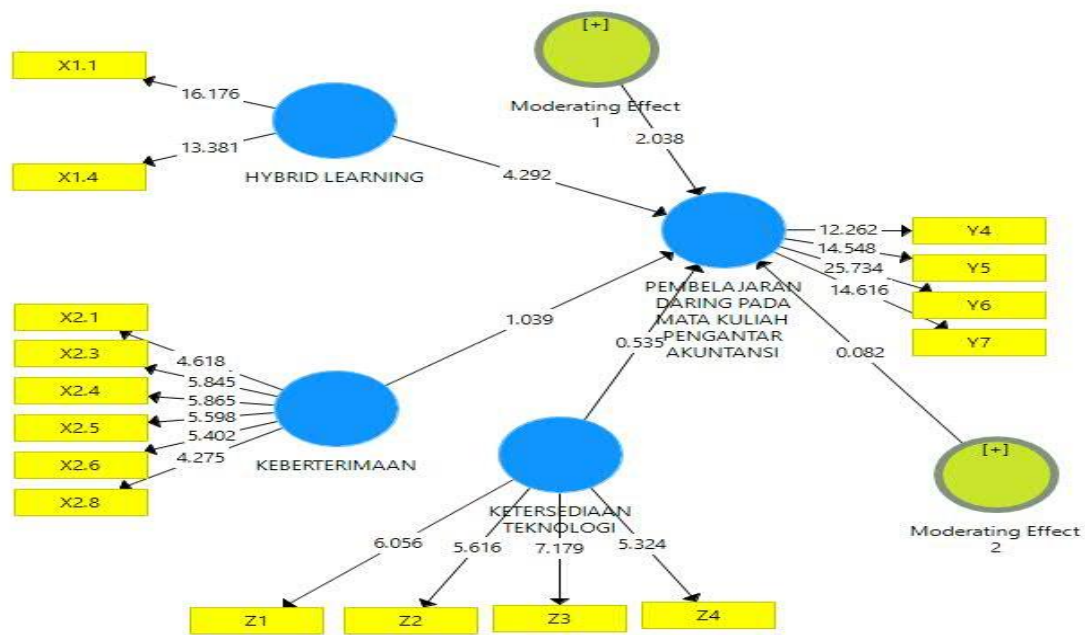


Figure 5. Outer Bootstrapping Scheme

Table 6. Signification Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Availability of Technology > Online Learning in Introduction to Accounting Courses	0.070	0,097	0,130	0,535	0,593
Effects of Moderation > Online Learning on Introduction to Accounting (X1*Z)	0.240	0,217	0,118	2.038	0,042
Effects of Moderation > Online Learning on Introduction to Accounting (X2*Z)	-0,010	-0,040	0,118	0,082	0,934

Hypothesis testing on the *moderating effect* construct 1 of the *Hybrid Learning* variable construct against the *Online Learning* variable in the *Introduction to Accounting Course* was moderated with the *Technology Availability* variable showing a value showing the original sample value of 0.240 and T-statistic 2.038 > 1.96 with p-values 0.042 < 0.05 so that the hypothesis was accepted.

Hybrid learning is a solution to the learning process in the era of the covid-19 pandemic with a combination of online or offline learning systems. *Hybrid learning* integrates the use of technology with participant interaction like traditional learning. The availability of internet-based technology provides various information media that can support the implementation of online learning. The availability of technology as a

moderation variable supports online learning as a medium of knowledge transfer by lecturers to students.

And – *learning* as a medium to download materials and collect assignments given by lecturers. While the use of *google meet* and *zoom* Reserved for *virtual class*. The face-to-face learning system, which is part of hybrid learning, is used by students to interact and discuss directly with classmates, which makes it easier to complete group assignments. Research conducted by (Sowanto et al., 2019), Hybrid Learning is able to increase students' confidence in completing their tasks. *Hybrid leaning* has the advantage of being complementary to the learning process as researched by (Yadiati & Sinaga, 2020).

The hypothesis test on the *moderating effect construct* of 2 variables Acceptability to the Online Learning variable in the Introduction to Accounting Course moderated with the variable Technology Availability showed the original value of the sample -0.010 and T-statistic $0.0082 < 1.96$ with p-values $0.934 > 0.05$ so that the hypothesis was rejected.

During the covid-19 pandemic, the availability of technology has become part of online learning. The actual use of technology based on an attitude of acceptance comes from the theory of TAM by (Davis, 1985) with the perception of convenience and the perception of usefulness of the use of technology. The acceptance supported by the availability of technology in this study has no effect on online learning in the introductory accounting course carried out by accounting study program students. The instability of the internet network which is affected by the location of the demographic can hinder the student learning process which affects the perception of convenience and usefulness in using real technology.

The availability of technology that is not supported by an attitude of acceptance of technology affects the level of understanding of learning materials (Rinaldi et al., 2020). Ease of access and usefulness *e-learning* does not make students able to understand the material of accounting courses which is a concrete scientific field. The implementation of online learning since the covid-19 pandemic has caused boredom which can reduce students' motivation to learn (Hermawan et al., 2021).

Conclusion

The conclusion of this study is that the hybrid learning learning system can affect the implementation of online learning in introductory accounting courses with technology availability facilities. The next conclusion is that acceptance that uses the perception of convenience and usefulness of a technology cannot affect the implementation of online learning in introductory accounting courses even with the availability of technology. The limitations of this study consist of two main points, the source of research data and the research variables. The source of the research data used primary data obtained through the distribution of questionnaires online, but respondents who had low interest in filling out the questionnaire. Then the second limitation, this study only consists of two independent variables, namely hybrid learning and acceptance. Suggestions for further research, research data sources are carried out using a mixed method between questionnaires and interviews. In addition, it is hoped that further research can add research variables in the form of self-efficacy, gender influence, and high school educational background

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