EJHEAA

ISSN : 3032-1123

https://doi.org10.61796/ejheaa.v1i4.497

Determination Of Online Learning With It Availability As A Moderating Variable

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Received: March 22, 2024; Accepted: Apr 29, 2024; Published: May 29, 2024;

Abstract: This study aims to examine the effect of hybrid learning implementation, attitudes and acceptance behavior of accounting study 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 uses 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 show that the implementation of hybrid learning has an effect on online learning in introductory accounting courses, which is supported by the availability of technology. However, the results of research on the attitudes and behavior of students' acceptance of accounting study programs have no effect on online learning in introductory accounting courses which are supported by the availability of technology.

Keywords: Hybrid learning; Theory Accaptance Model (TAM); and Technology Availability

Introduction

very rapid development of technology has positive potential for all aspects of human life, both in the political, economic, artistic and cultural fields, including the field of education. The availability of technology in the world of education is a medium for optimally delivering learning materials. Technology facilitates the process of distance learning which is not limited to a particular classroom. The use of technology has become a new innovation in learning methods [1], namely distance learning and 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 a platform in an online internet network . Online learning utilizes multimedia technology, video, animated online text , voice messages, e-mail , and online video streaming [2] . The purpose of online learning is as an open access to learning for everyone with a broad scope and not limited to the scope of the class.

The writing of punctuation marks (period, comma, colon, semicolon, parentheses, quotation marks, question marks, exclamation marks, slashes, etc.) is not preceded by a space and is continued by a space, except for the use of periods or commas in decimal number markers. Examples of the use of this section can be seen throughout the content of this template.

At the end of 2019, the World Health Organization (WHO) announced the discovery of Coronavirus Diseases 2019 (Covid-19) in Wuhan City, Hubei Province [3] . Covid-19 is a new type of disease that spreads so fast, causing a global pandemic. This phenomenon causes a health crisis throughout the world, of course it also affects the economic sector, education and other sectors. Minimizing the spread of the virus, the government establishes regulations to limit activities that have the potential to cause crowds, implement health protocols and provide periodic vaccines to the public. Supporting the government's efforts in tackling the Covid-19 pandemic, various public spaces, educational institutions or industries limit their operational activities so that several activities are carried out regularly. Activities carried out at home (stay at home), work from home or carried out via the internet. This is the trigger for changing the face-to-face learning system to online learning. Changes are so fast, causing various obstacles. Research [4] states that online learning cannot improve understanding of learning science, therefore the learning system has now changed to a hybrid learning learning system [5] .

Hybrid learning combines two learning systems based on face-to-face and online learning [6] . Implementation of a hybrid learning learning system as a response to the COVID-19 pandemic by utilizing internet-based information technology. Hybrid learning integrates exposure to online learning which is supported by the availability of technology as a support without reducing the intensity of face-to-face learning. The application of hybrid learning in every educational institution is adjusted to the conditions and needs. The characteristics of hybrid learning , which combines conventional and online learning methods, are an effective way to convey knowledge optimally. The implementation of hybrid learning is 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 students' ability to use technology is a measure of the success of learning and understanding of science.

As the purpose of learning, understanding of science is related to learning methods and student acceptance of using information technology. The availability of information technology and the internet improves the quality of learning understanding [7] . Accounting study students' understanding of introductory accounting course material is measured by the student's ability to analyze the recognition, recording, assessment and presentation of each element of financial statements [8] .

Acceptance of information technology is measured through a behavioral theory approach. The theory of acceptance of behavior for the use of information technology systems is tested with the theoretical approach of the Technology Acceptance Model [9] . Technology Acceptance Model is a development of the theory and model of behavioral information systems, namely Theory of Reasoned Action (TRA) by [10] . The acceptance factor for the use of information technology systems based on the Technology Acceptance Model (TAM) theory is the perceived usefulness of technology and the perceived ease of use . Perceptions of convenience and usefulness can increase interest in the actual use of technology through attitudes towards interest in using technology [11] .

Perceptions of benefits and perceptions of convenience have a significant effect on student interest in implementing online learning. As research [12] stated that generation Z students better understand technology and like online learning with visual methods. Another study conducted by [13] stated that learning from home and the availability of IT affect the understanding of learning in introductory accounting courses.

Acceptance of technology in the hybrid learning method in online learning carried out during the covid-19 pandemic, research needs to be carried out aimed at testing the acceptance and attitude

of accounting study students towards the implementation of combined learning methods, specifically in introductory accounting courses with technology availability facilities.

Methods

This study uses a quantitative approach. Quantitative research uses data that can be quantified and processed using statistical techniques [14] . The form of research in this research is survey research that uses primary data in the form of structured online questionnaires with variables measured and tested using a numerical scale using the Partial Least Square (PLS) application statistical procedure. The Likert scale is indicated by numbers 1 – 5, where 1 indicates the lowest level of disagreement and 5 indicates the highest level of agreement [15] .

The population in this study were students of 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 was 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 the measurement model (outer model) and structural model (inner model). The measurement model (outer model) consists of validity and reliability tests, while the structural model consists of determinant coefficients and path coefficients.

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

Discriminant validity test was used to test the correlation of two different instrument constructs. The discriminant validity test can be tested in two ways, namely using latent vertical correlation with the square root of Average Variance Extracted (AVE) and Cross loading with factor loading values > 0.5 and higher than other constructs. [16] .

Reliability test is used to test the consistency of the measuring instrument in order to measure a concept [17] . Reliability test is used as a measure of the consistency of respondents in answering the questions in the questionnaire. The reliability test can be tested in two ways, namely Croncbach Alpha and Composite Reliability. Reliable data has a Croncbach Alpha value > 0.6 [18] and a Composite Reliability value of 0.7.

The inner model or what is called the structural model is a measurement of the structural model between latent variables consisting of the determinant coefficient test (R 2) . Hypothesis testing using comparison of . values path coefficient with T table. The hypothesis is stated to be very significant if the T statistic > T table with 1% degrees of freedom. Meanwhile, if the T statistic > T table with 5% degrees of freedom then the hypothesis is declared significant and T statistic > T table with 10% degrees of freedom then the hypothesis is declared weak.

Results and Discussion

Results

Descriptive Analysis

The number of respondents in this study 80 people who with sex respondents male 10 people with a percentage of 12.5% and female respondents amounted to 70 people with a percentage of 87.5%.

Table 1. Characteristics of respondents by gender

No	Gender	Amount	Percentage
1	Man	10	12.5%
2	Woman	70	87.5%

This study was dominated by respondents aged 17-20 years with a percentage of 78.75% and ages 21-30 years with a percentage of 21.25%.

Table 2. Characteristics of respondents by age

No	Gender	Age	Percentage
1	Man	17 - 20	78.75%
2	Woman	21 - 30	21.25%

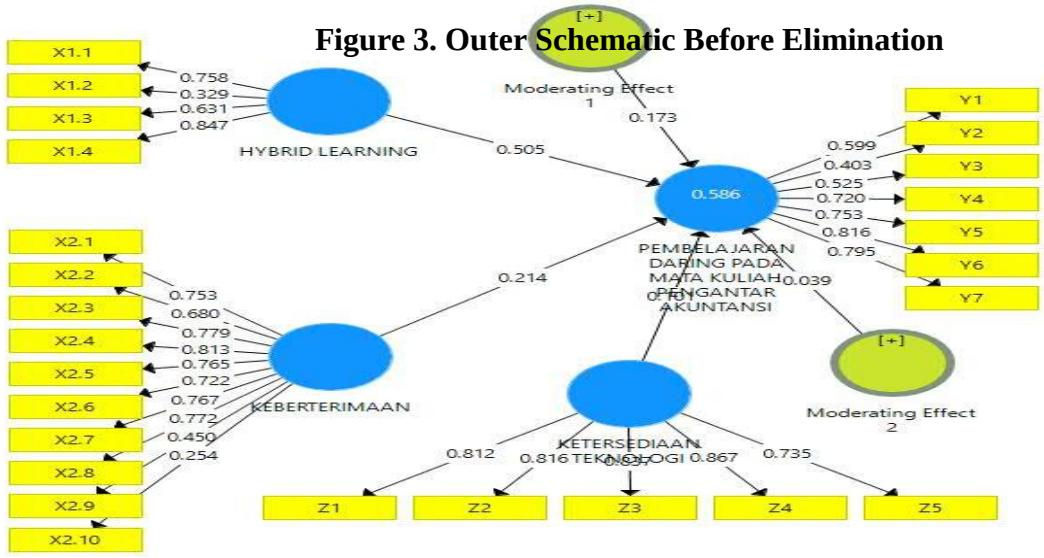
Measurement Model (Outer Model)

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

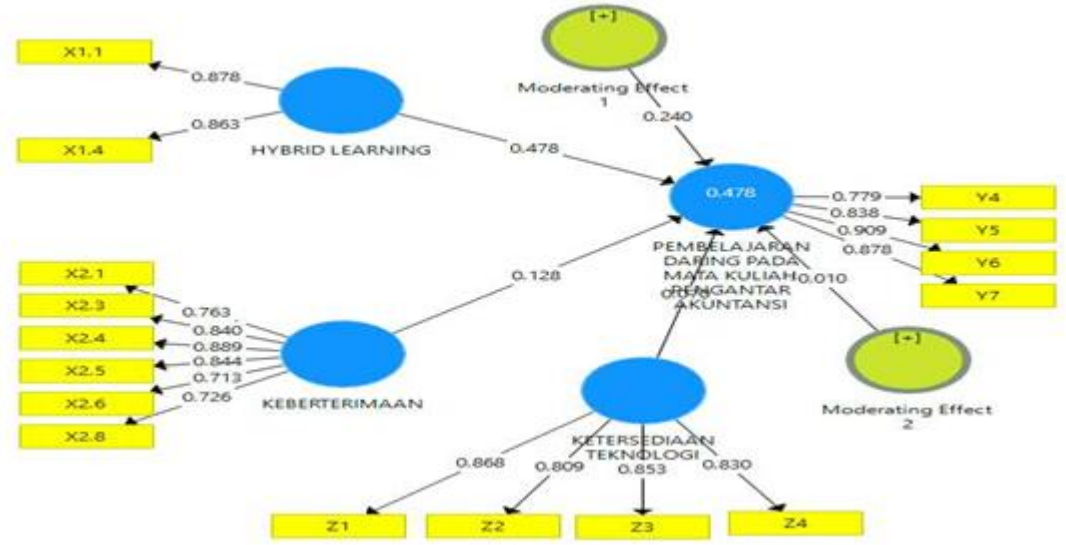
This study tested the validity of the indicators of the research variables, totaling 26 items. The test is carried out with the convergent validity test to measure the correlation between the construct and the latent variable with the provision that the correlation value is > 0.70 then it is declared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

Figure 3. Outer Schematic Before Elimination



The results of data processing in 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 removed from the data, including the variable indicators X1.2, X1.3, X2.6, X2.9, X2.10, Y1, Y2, Y3. After doing the elimination and calculation second, there are indicators that are not valid to be re-eliminated, namely the indicator variable X2.7 with a value of 0.695 and the indicator variable Z5 with a value of 0.690. The variable indicators on the questionnaire items were declared valid, totaling 16 items representing the categories of independent variable one (X1) Hybrid Learning totaling 2 items, independent variable 2 (X2) Accepting 6 items, the dependent variable (Y) Online Learning in Introduction to Accounting Courses amounting to 4 items and moderating variable (Z) Technology Availability totaling 4 questionnaire items. So the results of data processing as follows:

Figure 4. Outer Schematic After Elimination



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

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Table 3. AVE and Root AVE

	AVE	AVE . root

X1	0.758	0.862
X1*Z	1,000	1,000
X2	0.638	0.913
X2*Z	1,000	1,000
Y	0.727	0.914
Z	0.706	0.906

Table 3. AVE and Root AVE

	X1	X2	Z	X1.Z	X2.Z	Y
X1	0.870					
X2	0.254	0.799				
Z	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	
Y	0.642	0.249	0.239	0.456	-0.126	0.852

validity testing, 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 discriminant 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, the Cronbach alpha value must be greater than or equal to 0.6 stating medium reliability [19] , Composite reliability value is greater of 0.7 .

Table 4. Cronbach Alpha and Composite Reliability

Variable	Cronbach Alpha	Composite Reliability	Results
X1	0.680	0.862	Reliable
X2	0.890	0.913	Reliable
Z	0.864	0.906	Reliable
X1,Z	1,000	1,000	Reliable
X2,Z	1,000	1,000	Reliable
Y	0.874	0.914	Reliable

Structural Model (Inner Model)

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

a. Coefficient of Determination Test

The determination test is a test of the magnitude of the influence of the independent variable (X) on the dependent variable (Y). The determination test is carried out by looking at the value of R2 (variant analysis) by means of Bootstrapping .

Table 5. Reliability Test Results

Variable	R Square	R Square Adjust
Online Learning in Introductory Accounting Courses (Y)	0.478	0.433

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

b. Hypothesis testing

Hypothesis testing is carried out using Boostrapping feature . Boostrapping is done by comparing the T-statistic value with the T-table value. 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 p-value of 0.05 or 5% and a t-statistical value > 1, 96

Figure 5. Schematic of Outer Boostrapping

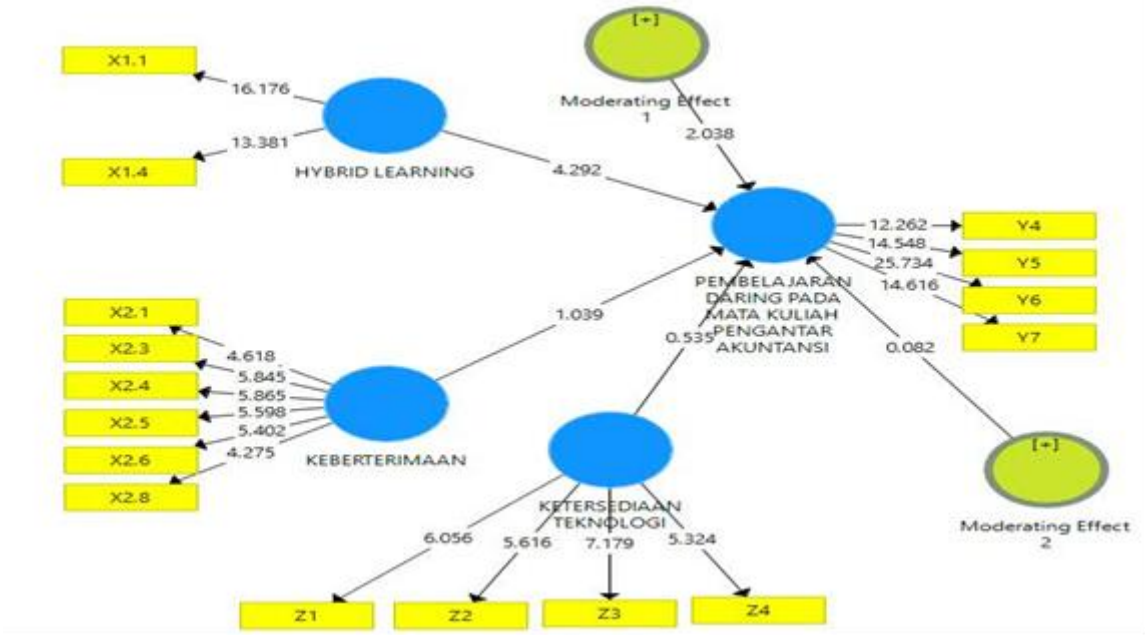

Table 6. Significance Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Availability of Technology > Online Learning in Introductory Accounting Courses	0.070	0.097	0.130	0.535	0.593
Moderating Effect > Online Learning on Introductory Accounting Courses (X1*Z)	0.240	0.217	0.118	2,038	0.042
Moderating Effect > Online Learning on Introductory Accounting Courses (X2*Z)	-0.010	-0.040	0.118	0.082	0.934

Discussion

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

Hybrid learning is a solution to the learning process in the era of the covid-19 pandemic with a combination of online and offline learning systems. Hybrid learning integrates the use of technology with participant interaction as in 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 moderating variable supports online learning as a medium for transferring knowledge by lecturers to students.

E -learning as a medium for downloading materials and collecting assignments given by the lecturer. Meanwhile, the use of google meet and zoom is intended for virtual classes . 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 [20] , hybrid learning is able to increase student confidence in completing tasks. Hybrid learning has the advantage of being complementary to the learning process as researched by [21] .

Hypothesis testing on the construct moderating effect of 2 Acceptance variables on the Online Learning variable in the Introductory Accounting Course was moderated with the Availability Technology variable showing the original sample value -0.010 and the T-statistic 0.0082 < 1.96 with p-values 0.934 > 0.05 so that the hypothesis was rejected.

covid -19 pandemic, the availability of technology is part of online learning. The actual use of technology is based on an attitude of acceptance derived from the TAM theory by [9] with the perception of convenience and the perception of usefulness of using technology. Acceptance that is supported by the availability of technology in this study has no effect on online learning in introductory accounting courses carried out by students of accounting study programs. The instability of the internet network which is influenced by demographic location can hinder the student learning process which affects the perception of the ease and usefulness of using real technology.

The availability of technology that is not supported by the attitude of technology acceptance affects the level of understanding of the learning material [4] . The ease and usefulness of access to e-learning does not make students able to understand accounting course material which is a concrete scientific field. The implementation of online learning since the covid-19 pandemic has caused boredom which can reduce student learning motivation [22] .

Conclusion

The conclusion of this study is that the hybrid learning system can affect the implementation of online learning in introductory accounting courses with the availability of technology facilities. The next conclusion is that acceptance that uses the perception of the ease 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, research data sources and research variables. Sources of research data using primary data obtained through the distribution of online questionnaires, but respondents who have low interest in filling out questionnaires. Then the second limitation, this research only consists of two independent variables, namely hybrid learning and acceptability. Suggestions for further research, research data sources are

carried out using a mixed method of questionnaires and interviews. In addition, it is hoped that further research can add research variables in the form of self-efficacy, the influence of gender and high school education background.

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