SEM-PLS ANALYSIS OF FACTORS AFFECTING THE EFFECTIVENESS OF ENGLISH COURSE ONLINE LEARNING DURING COVID-19 PANDEMIC

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A B S T R A C T S

Online learning is an alternative approach for continuing the learning process while the COVID-19 epidemic is underway. This research was undertaken to find out the factors affecting the effectiveness of English course online learning at Banyuwangi State Polytechnic during the Covid19 Pandemic. The factors studied included the quality of the media, the quality of the students, the quality of the modules/materials, the quality of the learning methods, and the quality of the tutors/trainers. The number of respondents was 259 students who were taken by using a purposive random sampling. The instruments used in this research were questionnaire and interview delivered online. The Partial Least Square (PLS) approach was used to examine this study model, which was aided by Smart PLS software. As for the results of this study, the overall p-value is smaller than 0.05, meaning that all variables have a positive influence on the effectiveness of online learning. The highest influence is from the variable of quality of students and the lowest is from the quality of tutors. The findings implicate that to deliver a successful online learning course, teachers must be able to create a new learning experience and atmosphere at each meeting through the use of diversified media, real learning resources, and appropriate learning methods in order to pique students' interest and motivate them to participate more actively in learning.

A R T I C L E I N F O

INTRODUCTION

Despite the limits imposed by the COVID-19 epidemic, the teaching and learning process continues. As a result, the learning process is carried out via a home-based distance learning strategy. This has an impact on the transformation of face-to-face learning activities into an online system, starting at the lowest level (Kindergarten or Study Group) and continuing to the highest level (University).

Online learning is a big challenge for most teachers, especially in Indonesia. Some researchers revealed some obstacles in implementing online learning during covid-19 pandemic. The first and foremost dealt with internet network connections at home (Amka et al., 2020; Damayanthi, 2020; Halimah & Siti, 2020). Because online learning is inextricably

linked to the internet network, a bad internet network connection is one of the challenges students and teachers encounter, particularly those who live in rural, isolated, or disadvantaged locations. Even when using a cellular network, the network can be unreliable because the geographical location is still outside of the cellular signal coverage area. Based on the results of interviews with students and teachers under this study, the network that was sometimes unstable resulted in a lack of optimization in learning. It could be that students did not fully hear the material or instructions delivered because it was cut off due to network problems. The signals that sometimes went up and down also made teaching and learning time even more delayed when online classes took place.

In the context of EFL learning, Ahmad (2016) in Ariani & Tawali (2021) faced problems in a listening session, the ICT equipment applied by teachers was often ineffective. It is further explained that Lecturers can't always keep an eye on students when conducting speaking tests, and they can't always prepare the students to talk during online classes. This is in line with what was conveyed by Abbasi et al. (2020) and Susilana et al. (2020) who said that students find it difficult to master subjects that involve practice.

The success of online learning is determined by the design and preparation of learning materials, the participation of lecturers in online environments, interaction between lecturers and students, and students with other students (Sun, 2016; Wu & Liu, 2013, and Bao, 2020). Regarding the latter problem, Hadisi and Muna (2015) confirmed that online learning results in a lack of interaction between teachers and students and even between students themselves. Student satisfaction with online learning is influenced by their social presence (Shea et al., 2001). This is a critical indicator of student motivation because they feel more engaged and motivated when their comments are valued and their inquiries are answered when they interact with instructors and classmates (Woods & Baker, 2004).

In conducting online learning, teachers or lecturers can use many kinds of applications, both paid and free, such as Google Classroom, Facebook, ZOOM, Youtube, Whatsapp, Google Meet, MOOC, etc. According to Mbukusa (2018), using WhatsApp as a resourceful teaching tool can make it difficult for students to balance online activities (WhatsApp) and academic preparation, as well as distract students from completing projects and sticking to their private study schedule. In using social media as resourceful teaching method, teachers must be more careful in choosing the media because students will easily be distracted between the learning process and only playing on social media, which has an impact on not completing the assignments or not delivering the learning materials.

Of the many platforms used as resourceful teaching methods, the use of video conferencing such as zoom and google meeting is more widely used by teachers at the Banyuwangi State Polytechnic. As a result, students tend to feel bored because they have to move from one video conference to another every day. Boredom can also be one of the factorsthat make line learning not yet effective. According to Dr. Lim Boon Leng (2020), a psychiatrist from Gleneagles Hospital on Liputan 6.com, the body and brain are always trying to maintain balance or homeostasis in this situation (online). He explained that When a Zoom meeting becomes boring, dopamine levels tend to drop, and the positive reinforcement for staying focused slowly dissipates. Thus, there is a natural urge to maintain dopamine levels by seeking stimulating experiences from the surrounding environment. Therefore he then suggested that the video conference should be no longer than 40 minutes.

On the basis of the preceding context, the goal of this research is to find out the factors affecting the effectiveness of learning activities, especially The English course carried out online at the Banyuwangi State Polytechnic during the Covid19 Pandemic. Learning effectiveness in this study is the ability to achieve the goals that have been set which results in changes in both attitudes and new skills in this case language skills, especially English in students, shown by results in the form of satisfactory scores in the online learning

environment during the Covid- 19 pandemic. The aspects studied include the quality of the media (Arizona et al., 2020; Salehudin, 2020), the quality of the students (Wilson, 2020), the quality of the modules/materials (Sun, 2016; Wu & Liu, 2013, and Bao, 2020), the quality of the learning methods, and the quality ofthe tutors/trainers (Gray & Diloreto, 2016; Ngo et al., 2021; Suryani & Sugianingrat, 2021). The statistical analysis technique used is the Structural Equation Model (SEM) - PLS/ Partial Least Square with assisted by Smart PLS software.

RESEARCH METHOD
Research Design

This study aims to determine the factors that influence the effectiveness of online English learning activities at the Banyuwangi State Polytechnic during the Covid19 Pandemic. There are five variables observed in this study which include, five independent variables (quality of media, quality of students, quality of modules/materials, quality of learning methods, quality of tutors) and one dependent variable (factors affecting learning effectiveness). The relationship between the five variables is described as shown in figure 1.
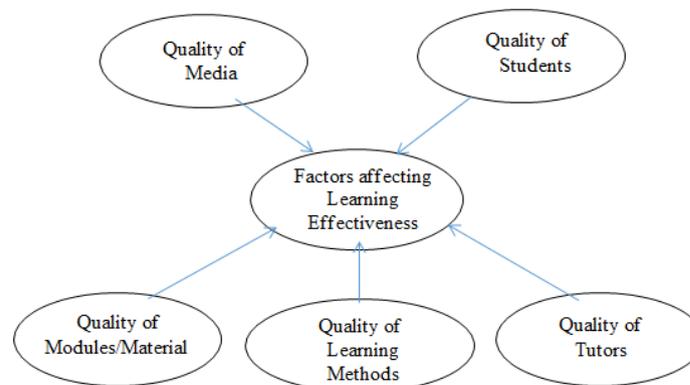

Figure 1. Model of Research Variables

Population and Sample

The population in this study were all students who took English courses during the Covid19 pandemic. The number of students of each Study Program taking English courses namely DIII Informatics Engineering Study Program as many as 170 students, DIII Civil Engineering Study Program as many as 80 students, DIII Mechanical Engineering Study Program as many as 110 students, and DIV Ship Manufacturing Engineering, Agribusiness, livestock product processing technology, and Tourism Business Management Study Program are respectively 53, 115, 87, and 114 students. The total number of students is 730. The number of respondents taken was determined using the Slovin formula with an error rate/significance level (α) of 5%.

The sampling used a purposive random sample with the number of each study program namely 60 students of DIII Informatics Engineering, 28 students of DIII Civil Engineering, 39 students of DIII Mechanical Engineering, 19 students of DIV Ship Manufacturing Engineering, 41students of DIV Agribusiness, 31students of DIV livestock product processing technology, and 41 students of DIV Tourism Business Management.

Research Instruments

The data was found by two research instruments. They were questionnaire and interview. The questionnaire developed was an online questionnaire having indicators related to learning effectiveness. The number of statements in the questionnaire was 20 statement

items using a Likert scale of 1-4. The interview was used to collect information about the problems faced by both English lecturers and a few students on the process of online teaching and learning during the Covid-19 pandemic. In this research, the researcher used a semi-structuredinterview and the process of interviews was also conducted online.

Data Analysis

The result of data of the questionnaire was used in The Partial Least Square (PLS). This method was used to examine this study model, which was aided by Smart PLS software. PLS is a non-parametric Structural Equation Modeling (SEM) method that may be used to solve complex problems in the relationship between variables when the data sample size is limited (30-100 samples) and the data does not conform to a single distribution (Yamin & Kurniawan, 2009). Data analysis carried out includes the validity and reliability test of variables, inner model analysis, and outer model analysis.

RESEARCH FINDINGS AND DISCUSSION
Research Findings

Every Variable has 4 indicators. When we want to know which indicator is the most influential, we must first know the validity and reliability of indicators, then the outer model and the inner model. The validity analysis is founded by loading factor. The loading factor value is used to determine convergent validity by looking at item dependability (validity indicator). The loading factor is a statistic that depicts the relationship between a question item's score and the construct indicator's score in measuring the construct. A valid loading factor is one that is more than 0.7. According to Hair et al. (1998), for an initial review of the loading factor matrix, a loading factor of about 0.3 is assumed to have met the minimum threshold, a loading factor of about 0.4 is thought to be better, and a loading factor greater than 0.5 is generally considered significant. The maximum loading factor employed in this investigation is 0.4. Table 1 below shows the findings of the loading factor after processing the data with Smart PLS 3.0.

Table 1
Loading Factor Value

No	Variabels	Indicators	Outer Loading
1.	Quality of Media	KM1	0,470
		KM2	0,632
		KM3	0,774
		KM4	0,653
2.	Quality of Modules/Materials	KMA1	0,676
		KMA2	0,724
		KMA3	0,538
		KMA4	0,549
3.	Quality of Learning Methods	KMP1	0,697
		KMP2	0,758
		KMP3	0,545
		KMP4	0,534
4.	Quality of Tutors	KP1	0,670
		KP2	0,701
		KP3	0,627
		KP4	0,606
5.	Quality of Students	KPD1	0,649
		KPD2	0,511
		KPD3	0,522
		KPD4	0,793

In table 1, the loading factor value shows more than 0.4, so it can be said to be good. Value of loading factor used in discriminant validity test. The discriminant validity test is carried out. The cross-loading value of the construct measurement is used to determine discriminant validity. The cross-loading value represents the level of correlation between each construct and its indicators, as well as indications from other block constructions. A measurement model has good discriminant validity. If the construct's correlation with its indicators is stronger than the correlation with indicators from other block constructs. The results of this investigation for Discriminant Validity are shown in table 2.

Table 2
Correlation Value Between Constructs With The Square Root Value Of AVE

No	Variables	KM	KMA	KMP	KP	KPD
1.	Quality of Media	**0,641**				
2.	Quality of Modules/Materials	0,330	**0,641**			
3.	Quality of Learning Methods	0,535	0,397	**0,627**		
4.	Quality of Tutors	0,285	0,230	0,297	**0,652**	
5.	Quality of Students	0,532	0,366	0,531	0,317	**0,629**

The AVE square root value for each construct is bigger than the correlation value, as shown in table 2, implying that the construct in this study model has good discriminant validity. This means that indicators are valid to form a model.

The outer model can be evaluated by looking at construct reliability or latent variables as shown by composite reliability scores, in addition to examining convergent and discriminant validity. If the composite reliability value is more than or equal to 0.7, the construct is considered reliable. Table 3 summarizes the findings of the composite reliability analysis.

Table 3
Composite Reliability Value

No	Variables	Composite Reliability
1.	Quality of Media	0,731
2.	Quality of Modules/Materials	0,731
3.	Quality of Learning Methods	0,718
4.	Quality of Tutors	0,747
5.	Quality of Students	0,717

The composite reliability value for all constructions is greater than 0.70, according to the Smart PLS output in table 3, all constructs have good reliability as a result of the resulting value, which is within the specified minimum value limit.

The inner model, or structural model, is tested after the outer model has been tested. The r-square (reliability of indicator) for the dependent construct and the t-statistical value of the path coefficient test can be used to evaluate the inner model. The higher the r-square value, the better the prediction model of the suggested research model. The value of the route coefficients indicates the level of significance in hypothesis testing.

The coefficient of determination for the Analysis of Variant (R2) or Determination Test, which is used to determine the influence of the independent variable on the dependent variable, is shown in table 4.

Table 4
R-Square Value

Variables	R-Square
Effectiveness Factors	0,996

In table 4, the quality of the media, the quality of teaching modules, the quality of learning methods, the quality of educators, and the quality of students can explain 99.6% of the variability of the constructs of the factors that affect the effectiveness of online learning in English courses, with the remaining 0.4 percent explained by constructs not studied in this study.

The Inner Model (structural model) test results, which include r-square output, parameter coefficients, and t-statistics, are utilized to test hypotheses. The significant value between constructs, t-statistics, and p-values, among other factors, are used to decide whether a hypothesis should be accepted or rejected. The assumptions for this inquiry were tested using the Smart PLS (Partial Least Square) program. These values can be seen in the bootstrapping results. As a rule of thumb, T-statistic > 1.96 with a significance threshold of p-value 0.05 (5%) and a positive beta coefficient were used in this investigation. Table 5 demonstrates the importance of analyzing this study's premise, and figure 2 depicts the research model's findings.
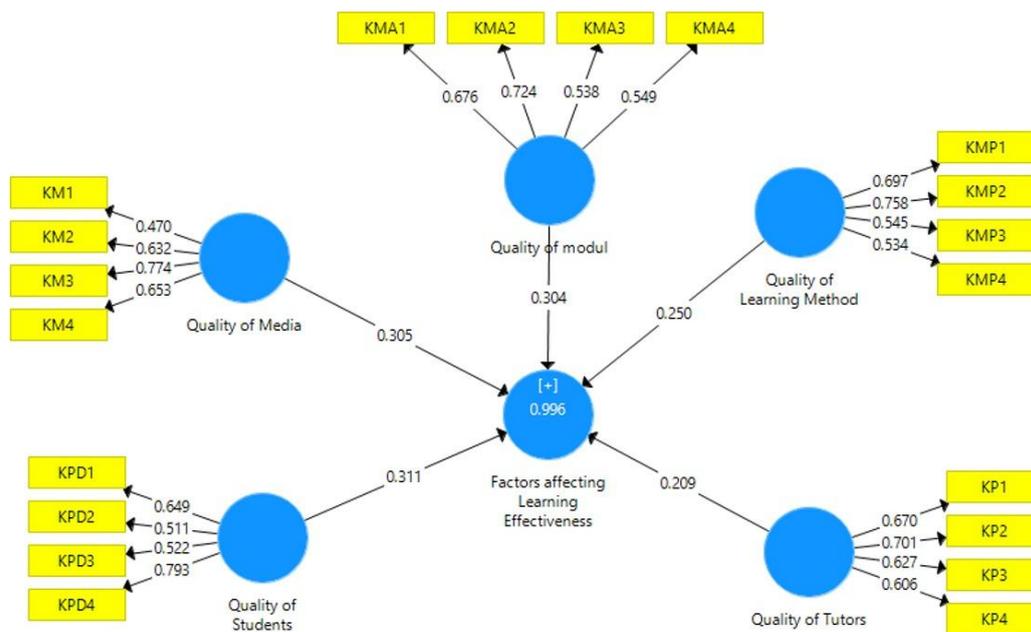

Figure 2. The Result of Research Model

Table 5
Path Coefficient Results

No	Variabels	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
1.	Quality of Media -> Effectiveness Factors	0,305	0,303	0,016	19,406	**0,000**
2.	Quality of Modules/Materials -> Effectiveness Factors	0,250	0,245	0,022	11,154	**0,000**

3.	Quality of Learning Methods -> Effectiveness Factors	0,304	0,302	0,017	17,848	**0,000**
4.	Quality of Tutors -> Effectiveness Factors	0,209	0,210	0,028	7,469	**0,000**
5.	Quality of Students -> Effectiveness Factors	0,311	0,310	0,017	17,873	**0,000**

In table 5, it is known that the overall p-value is smaller than 0.05 so it can be concluded that all variables have a positive influence on the effectiveness of online learning. The highest influence is from the variable of quality of students and the lowest is from the quality of educators.

Discussion
The Correlation between Quality of Students and Effectiveness of Learning during theCOVİD-19 Pandemic

The rapid growth of information technology necessitates a paradigm shift in the way learners study. In the past, the instructor was always thought to be the center of learning, but now it is the students who are the center of learning. Teachers and students are separated in distant learning (different distances, different places, and sometimes different times). As a result, learners' independence is predicted to be higher than that of traditional education students, and the utilization of interactive learning material will be more optimal. Because the learning system is independent and receives very little aid from the teacher, friends, or other parties in the setting of distance or online learning, learners are forced to be more active, engaging, and participative in the learning process. Less engaged learners are more likely to fail in their studies. Students must also increase their readiness to self-directed learning because online learning uses more self-directed learning (Wilson, 2020).

The Correlation between Quality of Media and Effectiveness of Learning during the COVİD-19 Pandemic

One of the supporting success in learning process is the use of learning media. Learning media is a tool that can be used to communicate educational messages (Sanaky, 2013). According to Dabbagh and Ritland (2005), an open and distributed learning system that uses pedagogical tools (educational aids) to assist the production of learning processes and knowledge through meaningful action and interaction is referred to as online learning. It is enabled by the internet and network-based technology. Google Classroom, Facebook, ZOOM, Youtube, Whatsapp, Google Meet, MOOC, and other online learning media should be able to assist (Sanaky, 2013):

a. Teaching attracts the attention of learners so that they can foster learning motivation. According to Cole and Todd (2003) interactive media can elicit a favorable response from students and boost their interest in learning, as evidenced by very high learning evaluations and outstanding learning activities.

b. Teaching materials have a clearer meaning, so that students can understand them better, and allow students to master the objectives of teaching well. The presence of learning media can help teacher clarify the subject matter presented. Clarity of material is critical in developing and maintaining conducive, optimal, and enjoyable learning circumstances and environments that allow the learning process to operate smoothly and learning objectives to be met.

c. Students are not bored, and teachers are not exhausted, because different learning methods are more than just verbal communication through the teacher's spoken words. Fakhrurrazi (2018) said that learning that uses a lot of verbalism will certainly be

boring. The use of learning media has a fairly important meaning because in the learning process, the ambiguity of the material presented can be helped by presenting the media as an intermediary. The complexity of the material presented can be simplified with the help of the media. The media can also represent certain words or sentences, even abstract material can be made more concrete with the presence of the media (Andriyani, 2017).

    d. Learners participate in additional learning activities because they don't just listen to the teacher's instructions; they also observe, do, demonstrate, and so on. Student involvement in the learning process is very necessary to achieve effective learning, and with the help of learning media, it can provide more opportunities for students to be actively involved in the learning process.

When selecting learning media, especially for distance learning, it should be adjusted to the material and learning objectives, student characteristics, environmental conditions, learning design, and the breadth of the range served, etc. Besides, the chosen learning media must be able to meet the needs or achieve the learning goals that have been set.

The Correlation Between Quality of Modules / Learning Materials and Effectiveness of Learning during the COVİD-19 Pandemic

The role of learning materials, especially in the distance learning process is also very important. The module can be formulated as a complete and stand-alone unit and consists of a series of activities that are structured to help students achieve a number of goals that are specifically and clearly formulated (Nasution, 2003). In online learning, the provision of material by the teacher is relatively small and not yet effective. In addition, access to ask questions to teachers and friends is also not as wide as face to face learning, by learning through modules/learning materials, students will: (Suryosubroto, 2002).

    a. Know the extent of their knowledge before studying certain subject matter. In the module, the substance more emphasized is the independence of students (self-study in a certain period) (Nasution, 2003). One module contains units of learning material based on the learning outcomes of the subject. Module is designed to support students read or study subject matter independently before the topic is being discussed in online meeting.

    b. Be able to study the chronology of each subject by viewing and studying the descriptions and examples. With descriptions and examples presented in the module, students will be able to comprehend and absorb the material better.

    c. Be able to work on questions and then match the results of their work with the answers provided in the module. Not only read or study the learning material, by having module they can also get more opportunities to practice by answering the questions. The more you practice, the more perfect the competence.

    d. Be able to study reference books that have been notified in the module as a reference if they have difficulty in learning the learning material. If they find any difficulty in understanding the certain topic in the learning material, the students can broaden their understanding by reading the references provided in the module.

Considering the importance of learning materials, especially in online learning, teachers need to develop good learning materials according to the needs and characteristics of students. The learning materials are then reviewed or evaluated within a certain period for improvement in the development of new learning materials.

The Correlation Between Quality of Learning Method and Effectiveness of Learning during the COVİD-19 Pandemic.

The learning method aims to improve the quality of learning for the better. It is a way that can be used to implement strategies in facilitating the implementation of a teaching and learning activity in order to achieve predetermined goals (Madjid, 2012). The selection of learning methods is based on the following considerations (Bahri, 2010):

a. It's always goal oriented. Whatever the learning method chosen, it must be able to help the teacher achieve the learning goal, that is attaining the skill and competence that must be mastered by the students.

b. It's not only tied to one alternative. There are many alternatives of learning method the teacher can use in their teaching and learning activities. The teacher can mix and match the learning method that most suitable to be applied in the classroom or in online learning condition.

c. It's often used as a combination of various methods. Each student has different learning styles. So it is important for the teacher to combine various method that is compatible with students' characteristics to help them improve their academic ability.

d. It's often used alternately from one method to another. Learning is a process and a way of getting knowledge and information that can be used to become more intelligent. Students' individual capacities in receiving instruction differ. Teachers frequently fail to recognize that not all students in a class can effectively absorb information. This is where a teacher's capacity to provide a range of learning that can be assimilated by all students at varied levels of aptitude comes into play (Fahrurazi, 2018).

Bahri (2010) further explained that the selection of learning methods has many influencing factors and needs to be considered, such as:

a. The goals with various types and functions. the goal or objective that expected as the outcome of the lesson also influence the strategy to be used by the teacher. The chosen learning method should ensure the full achievement of the objectives.

b. Learners with various levels of maturity. One of the most important thing to consider in choosing learning method is the learner. The characteristics and the nature of the students, such as age, maturity, grade level, abilities and interest should be considered for learning to take place.

c. Situation with various circumstances. the teacher needs to create non-threatening classroom atmosphere because it can enhance learning. So, the important thing that contribute in the success of learning is not only the physical condition of the classroom but also psychological condition of the learner.

d. Facilities with various quality and quantity. School equipment, school facilities, the availability of the materials are some factors that need to be considered in choosing learning method. In this pandemic era, the use of computer, mobile phone and internet connection are the most crucial thing to be possessed by all involved.

e. The teacher's personality and professional abilities that are different. The teacher's personality, style, academic preparation, skills and abilities are also some points that need to be considered. It is important that the teacher can effectively execute the strategy to make sure the success of learning.

f. The nature of learning materials. Subject matter or material deals with the content to be learned by the students. The materials may be difficult or uninteresting, therefore the teacher must be able to choose teaching method that makes learning process become interesting, effective, and meaningful.

g. The Strengths and weaknesses of the method. Every teaching method has its own strength and weakness. Therefore, teacher needs to use and try various kinds of

teaching method that are most suitable to the characteristic of the learner.

In determining the learning method used during online learning, teachers must consider those suggestions above.

The Correlation Between Quality of Teachers and Effectiveness of Learning during theCOVİD-19 Pandemic

The role of the instructor is shifting as a result of the new paradigm in online learning. Teachers transfer roles in the learning process to become facilitators, mediators, and motivators, supporting or enabling the learner's ability to learn as well as the learner's participation in the learning process. As a result, teachers must develop effective teaching methods, present engaging learning materials, and use appropriate learning devices, while students must actively participate in the learning process. In addition, teachers also need to encourage students to learn independently using various sources available on the internet (Sani, 2022). Participating in online distance learning will necessitate a high level of independence and discipline, since teachers/schools will use a variety of communication and information tools.

CONCLUSION

The success of online learning is positively influenced by all variables (the quality of the media, the quality of the students, the quality of the modules/materials, the quality of the learning methods, and the quality of the tutors/trainers). The highest influence is from the variable of quality of students and the lowest is from the quality of educators. It can be concluded that to present an effective online learning, teachers must be able to present a different learning experience and atmosphere at each meeting through the use of varied media, use authentic learning resources, and implement appropriate learning methods so as to arouse interest and motivation of students to be more active in learning.

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