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Student's Self-Efficacy and Perceptions of Online Learning on the Use Learning Management System

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ABSTRAK

Bukti empiris menjelaskan perubahan pembelajaran saat ini akibat pandemi virus corona, khususnya di Indonesia. Penelitian ini mengkaji faktor-faktor efikasi diri dan pengaruhnya terhadap pembelajaran online di salah satu universitas di Indonesia. Dalam penelitian ini, teori integrasi kognitif social digunakan dalam proses pembelajaran online. Jenis penelitian kuantitatif dengan alat kuesioner online diterapkan untuk mengumpulkan data dari 156 mahasiswa. Data dianalisis menggunakan pendekatan Structure equation modeling (SEM) diusulkan menggunakan perangkat lunak Lisrel. Penelitian ini menunjukkan signifikansi efikasi diri dalam menyelesaikan pembelajaran online dan efikasi diri dalam berinteraksi selama pembelajaran online. Dampak tersebut terlihat dari segi kenyamanan dan kesadaran diri siswa untuk mengikuti pembelajaran online. Sedangkan pengaruh interaksi social dalam pembelajaran online dikategorikan sebagai faktor yang tidak signifikan secara statistic mempengaruhi niat subjek.. Kondisi pemecahan kendala dan penanganan fitur dalam system manajemen pembelajaran (LMS) sangat penting untuk mencapai keberhasilan dalam pembelajaran online. Dari hasil penelitian faktor self-efficacy berdampak positif untuk penyelenggaraan e-learning dan dukungan instructor membantu mengatasi kendala teknis. Selain itu, penelitian ini berkontribusi pada implementasi dan bimbingan perilaku siswa untuk meningkatkan keberhasilan dalam pembelajaran online.

ABSTRACT

Empirical evidence explained the current changes in teaching and learning due to the coronavirus pandemic, especially in Indonesia. This study investigates factors of self-efficacy and the impacts on online learning in one university in Indonesia. In this research, the theory of social cognitive integration is used in the online learning process. This type of quantitative research with an online questionnaire tool was applied to collect data from 156 students. The data were analyzed using the Structure equation modeling (SEM) approach proposed using the Lisrel software. This study shows the significance of self-efficacy in finishing online learning and self-efficacy in interacting during online learning. The impacts are seen in terms of comfortability and self-awareness of students to attend online learning. On the other hand, the effect of social interaction in online learning is categorized as an insignificant factor statistically to influence the subject's intentions. The conditions of solving the obstacles and handling the features in the learning management system (LMS) are essential to achieving success in online learningFrom the research results, self-efficacy factors have a positive impact on the implementation of e-learning and instructor support helps overcome technical obstacles. Moreover, this study contributes to the implementation and guidance of students behaviours to increase success in online learning.

1. INTRODUCTION

E-learning is defined as an approach to perform teaching and learning activities using computers and internet connection as the additional media that replaces the conventional face-to-face to an online meeting (Almanar, 2020; Dhawan, 2020; Dhir et al., 2017). E-learning as an approach of teaching based on the technology where the teaching materials are delivered electronically for students at a long distance through an internet network (Sari & Setiawan, 2018). Learning management system (LMS) has been widely used due to its advanced management and supporting learning activities through the internet. So far, the effectiveness of e-learning has only been reviewed from a technical point of view, there have not been many studies on the success of e-learning in terms of user self-efficacy in Indonesia. This study finds out the best factors that contribute to the success of e-learning among self-efficacy, impact, comfortability, and support from teacher/instructor. The success of e-learning depends on the behaviour of students to accept the technology and their ability to overcome the obstacles in using the teaching instruments (Kanwal & Rehman, 2017). The indicator of success in online learning lies in the students feeling to be involved and accepted during the online course (Moawad, 2020). Stated

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that user satisfaction is a key to the effectiveness of e-learning. Several points of satisfaction in using elements of the e-learning interface such as layout, colours, font, and buttons (Farhan & Razmak, 2020; Sarsam & Al-Samarraie, 2018). The problems that occurred during e-learning are the primary key in determining the continuity from users (Gunesekera et al., 2019). Aside from the satisfaction, there is another factor to determine the effectiveness of e-learning; the technology readiness, internet quality, and the experience in applying the technology.

From the literature, the success of e-learning depends on these parameters. The instructor should lead the activity very well, and all the resources must be beneficial. Online teaching might not succeed when there is no capability and trust in management and operations (Aljaber, 2018). Monitored the parameters in developing an effective LMS and founded problems in the technology implementation that caused obstacles for students and teachers. The student's perception of e-learning is affected by the readiness of the infrastructure in conducting e-learning. Considered pedagogic competency based on technology as the main infrastructure for online teaching interactions. Interactions are the indicator to determine the success of e-learning education (Abulibdeh & Syed Hassan, 2011; Fedynich et al., 2015; Panigrahi et al., 2021). Interactions are also a reflective construction of self-efficacy in e-learning education (Aesaert et al., 2017), where students have the ability to present their ideas confidently. Positive perceptions will trigger someone to do complex tasks to face obstacles (Johnson & Marakas, 2000). In this context, the positive perception of e-learning will help students overcome the resistance in online learning by providing self-control in all activities. It is important to create a good ambience in conducting online learning. A good ambience can help to create positive changes in the success of learning. The convenience in conducting e-learning represents the capability in discussing and exploring, and changing ideas through e-learning.

Identified seven responsibilities of instructors in online learning; (1) establish the output; (2) give useful responses at the right time; (3) prepare materials; (4) monitor and evaluate the student progress; (5) as a facilitator of online learning; (6) as a facilitator in discussions; and (7) determine the requirements of e-learning. Instructors should prepare all the requirements and evaluate the e-learning process. The previous studies found that students who had a good perception in experiencing e-learning would be more confident to study and do interactions in e-learning (Dobbs et al., 2009). The perception of online learning triggered students to reflect on their ability in operating computers based on their previous experience. The interest causes the positive perception of e- learning (Kirby et al., 2012). In research about online learning self-efficacy, That self-efficacy is a reference that affected the perception in using the LMS system. The current studies about e-learning focused on technical and technology aspects only, yet no social aspect considered. The essential study related to e-learning from students' self-efficacy to apply the LMS (Gedera et al., 2013; Moreno et al., 2017). This approach gave a new learning experience and helped students explore the online learning environment using the LMS more effectively and efficiently.

One of the methods to determine self-efficacy is user experience. Mastery of skills will be improved while people have previous experiences to do something more challenging. The perception of online learning could be divided into four elements; Ability, enthusiasm, self-efficacy, and connectivity. The final result of online learning referred to the ability of the instructor to perform online teaching. Self- efficacy predicts that people will have a better ability when they believe that they have the ability (Barling & Beattie, 1983). People with higher self-efficacy have a strong intention to adopt e- learning systems (Hsia et al., 2014). Self-efficacy is an individual perception about their ability in doing tasks. In e- learning, the description of self-efficacy can be defined as a perception from the individual about their ability to accept the education lessons through e-learning systems (Rahmi et al., 2018). By this meta-analysis, self-efficacy is the primary key that has been widely used in accepted in determining the ease of use.

Self-efficacy of using a computer related to the experience in using the technology before so that there is no obstacle occurred for the next use (Rahmawaty, 2017; Wahyuni, 2019). Self-efficacy of using a computer cannot be separated from the capability to recognize alphabets, the ease in accessing a computer and use the computer (Awofala et al., 2015). The use of computers in the online learning environment practices students' self-efficacy when they determine the capabilities required to use the computer for finishing their online tasks (Saadé & Kira, 2009). Therefore, analyzing self-efficacy strategies in e-learning is essential due to the pandemic situation globally. Understanding the characteristics of self-efficacy is expected to get better output in conducting online learning (Dabbagh & Kitsantas, 2004).The results of other studies with the same topic as the table below. Interactions between students and the instructor have a significant impact on the satisfaction of online learning (Alqurashi, 2019; Park & Kim, 2020). Students have positive perceptions about online learning. Sources and learning materials are essential to adopt e-learning. The difference in experience is predicted as a self-motivation factor to attend online learning (Hong et al., 2021; Mujianto, 2019). This research aims to overcome the research questions in exploring the student's responses related to online learning. This research analyzes students' self-efficacy to impress the perception and satisfaction in conducting online learning.

2. METHOD

This study uses a survey method. Surveys are the most popular quantitative research strategy for data collection. This study applies a Likert scale with five questionnaire options as a quantitative data collection tool. Questionnaire containing statement items in which the respondent must make a response of approval or rejection between points 1 to 5 (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). This study uses two variables, namely online learning self-efficacy and student perceptions of online learning. Aspects of online learning self-efficacy include self-efficacy in completing learning, self-efficacy interacting in online classes, self-efficacy with classmates through LMS, self-efficacy in dealing with online learning disorders, self-efficacy using LMS features. While the variables of students' perceptions of online learning include impact, comfortability, and support from teacher. Each variable is measured through several items.

Sampling is a way of determining the number of respondents from a population so that it represents the population of a study. Probability sampling is the most frequently used method to draw robust and reliable conclusions. A larger sample size is expected to more accurately represent the population. We sent a questionnaire to 400 students and received 155 students with complete responses. The sample was randomly selected from IAIN SyekhNurjati Cirebon students based on the Madrasah Ibtidaiyah Teacher Education study program in semesters 4 and 6. Questionnaires using google forms were distributed online. The questionnaire was distributed online via Google Forms, email, and chatting, and the respondent's personal information was then deleted to ensure confidentiality.Data were analyzed using confirmation factor analysis (CFA) and structural equation modeling (SEM). This method is a powerful statistical tool for testing the relationship between latent constructs and testing a priori hypotheses regarding the relationship between observed variables and latent variables. This methodology takes a confirmatory approach to data analysis. Since CFA is part of a large family of SEMs, it usually plays an important role in evaluating measurement models before structural analysis is performed. Structural analysis is then used to determine and estimate the linear relationship model between the observed variables and the latent variables (Federici & Skaalvik, 2011).

3. RESULT AND DISCUSSION

Result

This research uses a questioner with 12 items of indicators and 31 statements that explain the dimension of self-efficacy. It also consists of 5 indicators and dimensions of the students perspective to online learning, including the impact, comfortability, and support. Validity and reliability tests have been done as the first step to evaluate the model. Table 1 presents the result for validity testing of the questioners. The calculation result of the Cronbach reliability has a characteristic that is bigger than the minimum acceptable value of 0.4 and more than the desired value of 0.7 (presented in Table 2) with the score of composite more than 0.6. Therefore, a high level of internal reliability will be shown amongst the evaluated indicators. Furthermore, the average variance extracted (AVE) for each latent variable is evaluated to examine the convergence of validity. All the AVE values in the model should be more than the minimum accepted level of 0.5 to fulfil the convergence requirement (Table 2). Table 3 presents the discriminant validity for the eight constructions. Discriminant validity is used to evaluate whether one latent variable differs from the other by comparing the relation between constructions in the square root of each other.

Table 1. Dimension of construction of the questioner items

No.	Factors	Statements	Validity
1	Self-Efficacy to complete online courses (F1)	I have plans to finish tasks given in the online learning (Item01)	0.693
2		I can see progress with online learning (Item02)	0.645
3		I manage to finish all the online activities, such as discussions, assignments and quizzes (Item03)	0.684
4		I follow the learning schedule well (Item04)	0.787
5	Self-efficacy for interacting with instructors in online courses (F2)	I ask questions clearly to teachers/instructors related to the topic (Item05)	0.61
6		I inform the instructor on time when something unwanted happened (Item06)	0.575
7		I ask for help to the instructor if needed related to diffuclties I have (Item07)	0.61
8	Self-Efficacy Interacting with classmates for	I participate actively in online discussions (Item08)	0.64
9		I communicate effectively with my classmates during online meetings. (Item09)	0.737

No.	Factors	Statements	Validity
10	academic purposes (F3)	I respond to other students on time and appropriately (Item10)	0.7
11		I express my opinion to other students during the discussions (Item11)	0.622
12	Self-efficacy to face challenges in online courses (F4)	I tried independently to learn on features or menus available in online learning (Item12)	0.633
13		I am able to overcome unwanted situations due to my own mistakes (Item13)	0.561
14		I ask questions to my friends to overcome the unwanted situations that I am experienced (Item14)	0.541
15		I can send the assignments online (Item15)	0.592
16	Self-efficacy for handling tools in LMS (F5)	I can post and answer comments in the discussion forum (Item16)	0.601
17		I can download materials through the available link/url (Item17)	0.624
18		I understand how to attend quizzes, look at my marking and the schedule of the quizzes (Item18)	0.704
19	Impact	My ability is improved while attending online learning (DP01)	0.587
20		I feel independent, and my consciousness about learning is improved (DP02)	0.691
21	Comfortability	Online class helps me to know about technology (MT03)	0.647
22		I know better to use browser and use the internet (MT04)	0.714
23		I feel that online class giving me more knowledge (MF05)	0.652
24		Online class helps me to control my study progress (MF06)	0.553
25		I am able to find the learning materials and assignments given by the teacher/instructor (KE07)	0.614
26		I experience technical obstacles while attending online class (KE08)	0.501
27	Support from teacher/instructor	Online classes provide learning materials in files, audio or video (SB09)	0.615
28		Online classes provide real examples from the taught subjects (DS10)	0.532
29		Teachers/Instructors encourage me to join discussions in the online class (DS11)	0.594
30		Teachers/Instructors provide rules or guidance on how to discuss in the online class (MO12)	0.586
31		Teachers/ Instructors guide how online class works through texts and videos (PK13) (PK14)	0.562

Table 2. Cronbach's Alpha, Construct Reliability (CR) and Average Variance Extracted (AVE)

	Cronbach's Alpha	CR	AVE
F1	0.831	0.8	0.5
F2	0.750	0.7	0.5
F3	0.896	0.9	0.6
F4	0.478	0.6	0.3
F5	0.886	0.9	0.6
Impact	0.806	0.8	0.5
Comfort	0.733	0.7	0.4
Support	0.834	0.8	0.5

Model Evaluation

The coefficient of determination and path coefficient scores with significant results as the success of the model structure. The R-Square for the latent variable endogen for self-efficacy (SE) is 0.522 (Table 4). It means the four latent variables. Table 5 describes the result for the path coefficient and the p-value for all the proposed hypotheses. The path coefficient gives significant relation in the hypothesis that connects each construction. Five hypotheses are not chosen as the p-values are more than 0.05, while the rest are supported with p-values less than 0.05.

Table 3. Discriminant Validity

	Comfort	F1	F2	F3	F4	F5	Impact	Support
Comfort	0.752							
F1	0.653	0.814						
F2	0.492	0.686	0.816					

	Comfort	F1	F2	F3	F4	F5	Impact	Support
F3	0.589	0.721	0.65	0.873				
F4	0.564	0.689	0.583	0.674	0.693			
F5	0.425	0.604	0.519	0.594	0.612	0.861		
Impact	0.726	0.719	0.569	0.624	0.702	0.582	0.797	
Support	0.606	0.618	0.533	0.454	0.583	0.598	0.689	0.777

Table 5. Coefficients o f Determination

	R Square	R Square Adjusted
Self-Efficacy	0.522	0.518
Impact	0.466	0.444
Comfort	0.556	0.542
Support	0.467	0.445

Table 6. Hypotheses' Path Coefficients And P-Values

	Path Coeficient	*P*-Values
F1 --> Impact	0.519	0.000
F2 --> Impact	0.100	0.407
F5 --> Impact	0.216	0.040
F1 --> Comfort	0.419	0.004
F2 --> Comfort	-0.006	0.963
F3 --> Comfort	0.191	0.126
F4 --> Comfort	0.155	0.184
F2 --> Support	0.255	0.014
F3 --> Support	-0.126	0.355
F4 --> Support	0.300	0.006
F5 --> Support	0.357	0.001

Discussion

This study discusses various aspects related to students' self-efficacy during online learning. In a recent study by Bandura and colleagues, they found that self-efficacy did indeed relate to performance and self-belief. An individual's level of self-efficacy can be defined as their belief in their ability or capacity to perform a particular task. Previous research has revealed that individuals with higher levels of self-efficacy in online learning context also tend to interpret external motivational messages in a positive light. This study shows that individuals with a good level of self-efficacy can complete tasks and other online activities which can be seen from the reports of activities in the LMS. In addition, they easily know the features and benefits of LMS without any guidance from the instructor. Students' behavioral intentions have positively influenced the success of online learning (Robinson, 2017; Yakubu & Dasuki, 2019). The student's view of online learning is required during online courses. This study adopts two indicators of satisfaction in online learning; self-efficacy and students perceptions. The results show the significant impact of self-efficacy on the perception of online learning, although not all the factors give significant effects in the result. The significance in the student perception in terms of self-efficacy and expectations confirm the agreement with the literature on how essential self-efficacy is to online learning success. The quality of self-efficacy had significant the results revealed and impacts on satisfaction use of LMS based on prior experience (Alzahrani & Seth, 2021; Culp-Roche et al., 2021).

In conclusion, this research reveals that self-expectation significantly impacts students' willingness to continue using the LMS. Two proposed factors were inspected in this study: Self-efficacy to solve online courses and impacted dimensions, the significance of self-efficacy and the student's perceptions of online learning. This study also exhibited insignificant impacts such as self-efficacy while interacting with the instructor in online learning to the impact. Also, self-efficacy to interact with classmates for academic purposes to the comfort dimension and self-efficacy to face obstacles in online learning to the comfort dimension were not included as significant impacts. Self-efficacy to interact with classmates for academic purposes to the dimension supported to the student's expectation shows that this pandemic situation affected students, especially in students' IAIN Syekh Nurjati Cirebon.

Self-efficacy to interact with instructors in online courses does not have a positive impact on study outcomes and technology skills in LMS. Self-efficacy to interact with instructors in online courses does not have a positive impact on the sense of comfort in learning to use LMS. Self-Efficacy interacting individually for academic purposes does not have a positive impact on a sense of comfort in learning to use LMS. Self-efficacy to face challenges in online courses does not have a positive impact on the sense of comfort in learning to use

LMS. Self-Efficacy interacting individually through LMS is still minimal due to inadequate teacher support and motivation and students do not fully implement the communication guidelines in LMS.Teachers can also use social learning theories in the classroom to encourage group work and collaborative work. Group projects, activities and exercises can be used to build group spirit within the classroom. Teachers can use the theory of social learning to inspire and motivate students to interact and work with each other through group projects.Recommendations for other researchers to add variables related to institutional policies, sources of teaching materials, demographic variables.

4. CONCLUSION

The self-efficacy factor of students completing online lectures and facing the challenges of online lectures has a positive impact on the success of online learning. Instructor support is needed in solving student challenges technically.The findings also show that self-efficacy is very important as a capital for effective adoption of e-learning. The outputs of this study provide significance for teachers, education developers, policy makers, and practitioners who wish to develop effective strategies for and increase the convenience of using LMS. They can arrange LMS according to the characteristics of the level of self-efficacy so that its implementation can be controlled and minimize student limitations.

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