PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE OF ONLINE LEARNING FOR ISLAMIC RELIGIOUS EDUCATION TEACHER

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ABSTRACT

The primary objective of this study is to examine how the perceived ease of use and usefulness of online learning, specifically using the SPACE (*Sistem Pembelajaran Agama Cara Elektronik*/Electronic Way of Religion Learning System) platform, impact the effectiveness of teaching professional education students. The study employs a mixed-methods approach, combining both qualitative and quantitative methods, and utilizes descriptive techniques. The research instruments utilized include interview forms and the TAM (technology acceptance model) questionnaire, which assess the participants' perceptions of the ease of use and usefulness of online learning. The research sample was selected using purposive sampling. Data analysis involved the utilization of multiple linear regression analysis. The findings of the study indicate a notable and significant influence of the perceived ease of use and usefulness of online learning. This is supported by the observation that the graduation rate of professional education students who acquire teacher professional certificates increased by 14.77% as a result.

Keywords: Learning Management System, Online Learning, Teacher Professional Education

ABSTRAK

Tujuan utama penelitian ini mengkaji persepsi kemudahan penggunaan dan kegunaan pembelajaran online menggunakan platform SPACE (Sistem Pembelajaran Agama Cara Elektronik) berpengaruh terhadap efektivitas pembelajaran bagi mahasiswa pendidikan profesional. Penelitian ini menggunakan pendekatan kualitatif-kuantitatif dengan metode deskriptif. Instrumen penelitian yang digunakan meliputi formulir wawancara dan kuesioner TAM (technology acceptance model) yang mengevaluasi persepsi partisipan terhadap kemudahan penggunaan dan kegunaan pembelajaran online. Sampel penelitian dipilih menggunakan teknik purposive sampling. Analisis data dilakukan dengan menggunakan analisis regresi linear berganda. Hasil penelitian menunjukkan pengaruh yang signifikan dan mencolok terhadap persepsi kemudahan penggunaan dan kegunaan pembelajaran online. Hal ini didukung oleh observasi bahwa tingkat kelulusan mahasiswa pendidikan profesional yang memperoleh sertifikat pendidik meningkat sebesar 14,77% sebagai hasilnya.

Kata Kunci: Pendidikan Profesi Guru, Learning Management System, Pembelajaran Daring

INTRODUCTION

Technology's existence must have a positive influence on human lives. It is good influence comes with its own set of limits and obstacles, which might become bad if technology is not used appropriately for its intended purpose. The use of technology in education is both a demand and a requirement. Because of the continual rise of Internet innovation and technology, learning through technology, often known as e-learning, has become a popular strategy in higher education institutions (Al-Adwan et al., 2013). It is necessary to prepare human resources that are ready and adaptive to technology, especially technology-based learning or pedagogical content knowledge, which has advantages. Knowing how learning strategies or models are delivered using technology is very important as it will not limit the teacher's role in using technology in learning.

The teacher education program aims to cultivate professional, competent, and responsible teachers who fulfill their duties of imparting knowledge and experiences while serving as role models. The primary objective is to mold students into individuals of faith, competence, intelligence, excellent character, and other desirable qualities, as stipulated in Indonesia's education system law. To adapt to the circumstances of the pandemic and post-pandemic COVID-19, the Teacher Professional Education (TPE) activities were conducted online for a duration of six months, spanning from 2019 to 2022. Online learning for TPE necessitates the use of various tools, one of which is the electronic learning system known as the SPACE (*Sistem Pembelajaran Agama Secara Elektronik*/Electronic Way of Religion Learning System).

One of the essential roles of a teacher is to have a considerable impact on student accomplishment; this must be taken into account in education (Diep & Hartmann, 2016). In the current era of globalization, a more applicable teaching and learning process can be realized by increasing the quality of teachers in the intellectual and creative aspects (Kusen et al., 2019). Increasing teacher quality will result in better teaching and learning (Curci et al., 2014). Teaching and learning activities based on teacher professionalism can build the positive character of students, one way that may be taken to enhance teacher quality is to provide professional and academic education for teachers (Komarudin, 2021; Ningrum, 2016). Avalos asserts that teacher professional development may help teachers re-learn and improve their learning methods and put their knowledge into applications that benefit student growth (Joo et al., 2018).

There are several advantages that TPE offers. TPE not only increases professionalism through improving the way of educating, guiding, teaching, and assessing but also developing sustainable competencies (Salehudin & Sada, 2020). The program is an initiative by the Indonesian government to generate professional teachers with high graduate competency and the ability to compete (Alfarisa & Fitri, 2015). Teachers need to have proper ethics, especially teachers who are undergoing TPE at Islamic Universities, which must be based on Islamic teachings (Nurulhaq et al., 2019). Teachers need to understand the role of their profession, which emphasizes the importance of teacher-student interaction (Dreher & Kuntze, 2015). Professional development for teachers is a key mechanism for improving classroom instruction and student achievement, TPE also fosters and educates teachers to become professional teachers who are proficient in the four competencies (Ball & Cohen, 1999; Borko, 2004; Triwinarni, 2017).

TPE may help teachers improve four skills: pedagogical competence, personal competence, social competence, and professional competence (Martubi & Yudantoko, 2020). This growth in competence is possible due to a curriculum in Professional Teacher Education that includes workshops for designing learning tools, teaching exercises through micro-learning, peer learning, field experience programs, and study and pedagogic enrichment programs (Ramdhan & Siregar, 2019; Zulfitri et al., 2019). Through these programs, teachers are expected to be more proficient in planning, selecting teaching materials, developing, and actualizing a productive learning process (Zulfitri et al., 2019).

There are several previous studies related to this research which are related to the purpose of implementing PPG (*Pendidikan Profesi Guru*/Teacher Professional education) (Alfarisa & Fitri, 2015; Zulfitri et al., 2019). According to these studies, PPG strives to improve educational quality and professionalism. Following that is research on the policy foundations for implementing PPG activities in Indonesia (Disas, 2017). In addition, there is also research that examines the components and flow of an implementation of PPG. This study describes the components of TPE, including management, curriculum, and benefits for increasing teacher competency and the flow of an implementation of PPG, including theoretical deepening, workshops, and skills training (Hayati & Widiati, 2015).

PPG requires policy, morals, infrastructure, and financial support that can lead teachers to become professionals (Tanang & Abu, 2014). The use of e-learning in the implementation of TPE has its benefits. Students consider e-learning effective with increased inter-activity modules, perceived usefulness, and ease of use (Baharin et al., 2015). Perceived ease of use of e-learning positively impacts perceived usefulness, actual use, and user satisfaction. Perceived ease of use significantly affects the intention to use e-learning (Ibrahim et al., 2017; Isaac et al., 2018). The technology acceptance model can be applied to explain the user's desire to adopt a web-based assessment system (Liao et al., 2018). Implementation of online learning through technological pedagogical content knowledge (TPACK) at State Islamic University LPTKs has succeeded in increasing teacher competencies such as online class management competencies. One of the obstacles in implementing online learning includes very varied technological literacy and material delivery that is not comprehensive (Quddus, 2019; Turmuzi & Kurniawan, 2021).

In addition to teacher TPACK positively influencing the perceived ease of use of technology and perceived usefulness of technology in the classroom, teacher development of TPACK is essential for effective teaching with technology (Joo et al., 2018; Koehler & Mishra, 2009). To be able to utilize technology in learning, teachers must adaptively understand TPACK in an implementation manner. To improve the digital culture with high perceived ease of use and actual system use of information technology should be supported with complete and comprehensive socialization, and also provide the manual guide for each information system (Maylawati et al., 2020). What must be strengthened through online learning processes and workshops on campus is regarding mastery of scientific structures, concepts, and principles according to the field of study (Sunaryo et al., 2020).

Previous research has highlighted the importance of conducting a study that examines the effectiveness of in-service PPG implementation, specifically when utilizing the SPACE platform for learning activities. This research brings novelty by exploring and evaluating the effectiveness of PPG implementation using the SPACE application. It seeks to understand student responses, readiness, challenges, and learning outcomes associated with PPG using SPACE. Building upon the findings of a prior study (Tyas & Darma, 2017) which demonstrated the significant positive impact of perceived ease of use on perceived usefulness, this research investigates the influence of these two aspects on the effectiveness of learning implementation. The study aims to assess student responses regarding the perceived ease of use and perceived usefulness of the LMS SPACE in online PPG learning, as well as examine the effects of perceived ease of use and perceived usefulness on learning effectiveness. The questionnaire employed in this study adopts the technology acceptance model, focusing specifically on the aspects of perceived ease of use and perceived usefulness. These aspects concentrate on the user's perspective concerning the convenience and usability of the SPACE LMS application.

METHOD

To measure PPG students' perceptions of online learning using TAM parameters on the Perceived Ease of Use and Perceived Usefulness aspects, this is due to the focus of this research to find out students' perceptions of the benefits of implementing technology from the aspect of usefulness and ease of usea as independent variables and learning effectiveness as dependent variables. The population in this study were PPG students currently teaching PAI (*Pendidikan Agama Islam*/Islamic Religious Education) taking TPE program at PTKIN (*Perguruan Tinggi Keagamaan Islam Negeri*/State Islamic Religious Colleges). The sampling technique was purposive sampling to determine tertiary institutions and convenience sampling to students who wished to provide information, with a total sample of 711 PAI students from three PTKINs who filled out the questionnaire: UIN (*Universitas Islam Negeri*/State Islamic university) Sunan Ampel

Surabaya, IAIN (*Institut Agama Islam Negeri*/State Islamic Institute) Salatiga and UIN Sunan Gunung Djati Bandung.

The research sample of PPG for PAI students in 2021 totaled 711 people, consisting of 395 students at UIN Sunan Ampel Surabaya, 193 students at IAIN Salatiga, and 123 students at UIN Sunan Gunung Djati Bandung. The analysis used in this study is multiple linear regression analysis. The research instrument consisted of an interview form and a five-question questionnaire on perceived ease of use and perceived usefulness. For indicators of effectiveness using four indicators, according to Slavin, namely: the quality of learning, the suitability of the level of learning, intensive, and time. The data collection technique used to obtain data that is relevant to the problem under study is through the survey method which is a way of obtaining primary data on the research object by directly observing the research object (Slavin, 1995). Primary data obtained by literature study, which is carried out by reading and studying the literature contained in the library with the aim of obtaining a theoretical basis regarding the main issues being discussed. The issues include: field research, namely data collection techniques by visiting research locations to make direct observations; questionnaires and surveys using the TAM model. The model is also known as the technology acceptance model, which is a data collection technique that is carried out by giving a set of written statements or questions to respondents (Sugiyono, 2017). A questionnaire, whether it is called a form or schedule, interview form, or measurement instrument, is a series of informed questions to obtain as complete information from the respondent as possible (Malhotra, 2006). In this study a questionnaire to measure the implementation of online learning using the TAM model, by measuring the parameters perceived ease of use, perceived usefulness, and to measure the effectiveness of using: quality of learning, appropriate level of learning, intensive, time; and focus group discussions (FGD). Data collection techniques through group interviews and discussion in groups to discuss a particular topic. This FGD was conducted with the heads of the Tarbiyah and Teacher Training faculties at three universities, the heads and secretaries of the PPG study program.

RESULTS AND DISCUSSION
Perceived Ease of Use and Perceived Usefulness Towards Online Learning

The first construct is Perceived usefulness. This study first focuses on the construct of perceived ease of use. To find out the Perceived Ease of Use of the SPACE LMS application is presented in Table 1.

Table 1. Perceived Ease of Use Questionnaire Results

	Statement	Percentage (%)	
	X_1= Perceived Ease of Use	No	Yes
1.	Have attended LMS (Learning Management System) training	65.82	34.18
2.	When using the Electronic Learning System (SPACE) application, do you ask for help from operators/colleagues to use it?	75.80	24.20
3.	Do you find it difficult/requires a long time to learn/use the SPACE application?	90	10
4.	I have no problems accessing SPACE during PPG Online.	22.1	77.9
5.	Is the SPACE application easily accessible anywhere, anytime, in any media (desktop/mobile)?	5.2	94.8
6.	Do you think all the menus/features/functions provided by the SPACE application are complete and meet the needs of the learning process?	7.2	92.8

Based on Table 1, the questionnaire results on perceived ease of use, students who have attended LMS training 34,18 %. This shows that students are new to LMS SPACE when participating in online PPG activities. While using SPACE application and requesting operator/colleague assistance. 24.20% students said yes, while 75.80% said no. It can be concluded that more than half of students did not seek assistance from operators or colleagues, that the majority (90%) did not find it difficult or time-consuming to learn/use the SPACE application, and that more than half of students (77.90%) did not encounter problems accessing SPACE during TPE Online. Almost all, or 94.80%, of SPACE applications, are simple to access from anywhere, at any time, and on any device (desktop/mobile), and 92.89%, or the majority, believe that all menus/features/functions provided by the SPACE application are complete and meet the needs of the learning process. This table shows that the average Perceived Ease of Use in the very good category is 98.34%.

These results indicate that students' perceptions based on TAM regarding the use of SPACE in PPG learning received a positive response, more than half of students while using SPACE application did not ask for help from others; do not find it difficult/requires a long time to learn/use the SPACE application; do not experience problems in accessing and the SPACE application is easily accessible anywhere, anytime, in any media (desktop/mobile). Perceived ease of use indicator as a construct of ease of use which is a belief about the decision-making process. If someone feels confident that the information system is easy to use then he will use it. Conversely, if someone believes that the information system is not easy to use then he will not use it, so the SPACE application which is provided in the LMS format makes it easy for students who take part in PPG. Even though online learning sometimes has weaknesses, if implemented optimally it will have an impact on good user responses and can help learning amidst limitations in communication.

Reducing shortcomings in online learning can mitigate the adverse effects associated with this mode of education (Abdurrahmansyah et al., 2022) Online learning has proven beneficial for students, as it enables them to develop independent learning skills (Erarslan & Arslan, 2020). Particularly for students currently engaged in PPG, the utilization of the SPACE platform makes it convenient to balance their participation in PPG and their responsibilities as teachers who need to provide instructional materials to students. This ease of use allows for optimal coordination between PPG commitments and teaching duties.

The use of technology in learning must be organized properly and optimally. Technology needs to be well understood and perfectly prepared both in terms of equipment and the readiness of human resources as users. The dominant factor that needs attention in realizing the effectiveness of e-learning implementation in tertiary institutions is the organizational aspect which is manifested in the form of creating a work culture (Priatna et al., 2020). Getting used to being close and familiar with technology will have an impact on work effectiveness and efficiency.

The technology acceptance model (TAM) was developed through a psychological theory that explains computer user behavior based on belief, attitude, intention, and user behavior relationship (Davis, 1989). Information system success can be measured by four types of measures, namely user satisfaction, system use, decision performance, and organizational performance. Utilization of technology or information systems indicates an individual's decision to use or not use technology or information systems in completing a series of tasks (Goodhue & Thompson, 1995). TAM as a method used to explain user acceptance behavior towards technology. The advantage of this method is that it is one of the most widely used methods for conducting research on users.

The Technology Acceptance Model (TAM) has five (5) main constructs, one of which are perceived usefulness and perceived ease of use. This is in accordance with the function of

online learning as access to information (Kitao, 1998). Through online learning, information in various available fields or developments that are happening all over the world (global world) can be accessed quickly by many people. Likewise, information relating to the field of education or learning is easy, plentiful, and fast to access. Learners do not have to be present directly in the classroom/lecture to participate in learning activities, but simply sit from their respective places in front of the computer (of course using computer equipped with connection facilities to online learning) and use it. Learners can interact with learning resources, both in the form of material. The learning itself as well as with the teacher who fosters or is responsible for the learning material. With online learning, students have choices or alternatives to study face-to-face or through online learning. Attitudes to and use of information systems for learning tend to focus on ease of doing learning tasks, affordability of technology (e.g., mobile apps), and inclusivity in the learning environment (Annamalai et al., 2021).

In order to assess the Perceived Usefulness of the LMS Space in online PPG learning, students are provided with a questionnaire consisting of specific questions. These questions aim to gauge the extent to which the SPACE application is perceived as useful in enhancing teacher competence during online PPG, improving pedagogical competence, being easy to learn and navigate, fostering motivation to learn and utilize the SPACE application during online PPG, and enhancing understanding of technological pedagogical content knowledge (TPACK). Overall, PPG students demonstrate a positive response towards the perceived usefulness of the SPACE application, as indicated in Table 2.

Table 2. Results of the Perceived Usefulness Questionnaire

Statements X_2= Percieved Usefulness	Percentage (%)	
	No	Yes
1. Do you think the SPACE application is helpful to help increasing teacher competency during PPG Online?	0,7	99,3
2. Do you think the SPACE application is helpful to help improving teacher pedagogical competence during PPG Online?	1,3	98,7
3. Is the lecture material presented in SPACE easy to learn and presented in full?	4,4	95,6
4. Are you motivated to learn/use the SPACE application during PPG Online?	1,1	98,9
5. In my opinion, PPG carried out online using SPACE can increase my understanding of Technological Pedagogical Content Knowledge (TPACK)	0,8	99,2

The findings from the Perceived Usefulness questionnaire reveal that nearly all, or over 95% of participants, acknowledged the utility of the SPACE application in enhancing teacher competence during online PPG. They also recognized its value in improving pedagogical competence in the online PPG setting. The respondents found the SPACE application easy to learn and navigate, and it provided comprehensive support. Moreover, the SPACE application served as a motivating factor for learning and utilizing it during online PPG, while also enhancing their understanding of TPACK. Based on the data presented in the table 2, it can be concluded that the average Perceived Usefulness rating is 98.34%, indicating a highly favorable perception in the "very good" category.

In Perceived Usefulness, almost all stated positive responses that SPACE was useful for helping to increase teacher competence during Online PPG; help increase teacher pedagogic competence during Online PPG; lecture material presented at SPACE is easy to learn and presented in full; students are motivated to learn/use the SPACE application during PPG

Online; and SPACE can improve my understanding of technological pedagogical content knowledge. Perceived usefulness (usefulness) from its definition, is a belief that is useful about the decision-making process. Thus if someone feels confident that the information system is useful then he will use it. Conversely, if someone believes that the information system is less useful then he will not use it. This means that SPACE is very useful in PPG learning, in situations where learning is carried out online, the application is useful for overcoming the difficulties of tools so that students keep learning. Information system success can be measured by four types of measures, namely user satisfaction, system use, decision performance, and organizational performance.

The utilization of the SPACE application facilitates students' engagement in PPG learning activities, as it enables synchronous lectures with real-time interaction. This synchronous online learning approach offers distinct advantages by fostering a sense of togetherness. Learners have the opportunity to ask questions, provide answers, and engage in discussions with instructors and fellow participants in real-time. Consequently, each query receives prompt responses, ensuring a seamless cognitive process for learners without interruptions.

Besides that, direct interaction also makes students not feel alone and isolated in learning. Another drawback of synchronous learning is the time constraints that learners usually experience. The learning process that is carried out at the same time that demands 'presence' simultaneously can lead to low flexibility in learning time. This is of course difficult for students who work full time and of course can have working hours that are different from one another. Another learning technique is through asynchronous which is considered better in terms of increasing cognitive participation of learners (reflection and digestion of information). On the other hand, synchronous learning is considered better in increasing 'personal' participation such as enthusiasm and motivation to learn.

The most obvious weakness of asynchronous online learning is the lack of direct interaction which causes students to feel isolated. The feeling of being 'alone' and not having friends that are often felt by asynchronous online learning learners can cause feelings of frustration and demotivation when they experience learning problems, and can lead to a desire to stop the learning process (Belawati, 2019). For this reason, SPACE has uses in online learning, either synchronously or asynchronously. Utilization of technology or information systems indicates an individual's decision to use or not use technology or information systems in completing a series of tasks (Goodhue & Thompson, 1995). More than 90% of students respond positively to perceived usefulness and perceived ease of use for using LMS Space in online PPG learning. This is an indicator that LMS Space in online PPG learning can provide benefits and is easy to use. The intended benefits appear in the features and menus that exist in LMS SPACE which provide benefits for online PPG learning. Task menus, discussions accompanied by examples and complete modules provide the benefits of online learning so that task instructions and discussions are given clearly and completely.

The Effectiveness and Results of in-Service PPG Graduation

In-service teacher training has a significant effect on teachers, especially on academic qualifications, performance, and professionalism (Swan, 2003). Therefore, the implementation of PPG activities must always be evaluated in the aspects of program planning, implementation and evaluation. Effective and optimal implementation of activities will have an impact on achieving the objectives of implementing activities, one of which is an increase in the number of PPG students who graduate and get professional teacher certificates. The effectiveness of learning can be measured using the four indicators, there are learning quality, the appropriate level of education, incentives (how much effort the teacher puts forth to motivate students to complete or work on assignments and study the material provided), and time.

Table 3. Measuring the Level of Learning Effectiveness

Indicator	Yes (%)	No
Learning quality	96,41	3,59
The appropriate level of education	98,66	1,34
Incentives	91,27	8,73
Time	95,00	5,00

Based on Table 3. which measures the level of learning effectiveness, all indicators are above 90%, so it can be concluded that the quality of learning, the suitability of learning levels, incentives, and time are very effective in PPG using SPACE.

The level of effectiveness of learning using the SPACE application is reviewed based on the quality of learning, the suitability of learning levels, incentives, and time, almost all students show a positive response. This shows that the application is very effective for PPG activities that are carried out online. Situations that occur that require the implementation of online learning must be managed properly starting from the availability of learning applications, the completeness of menu displays, subject matter, and easy access will have an impact on achieving the learning objectives themselves. Setting lecture material and discussion topics must pay attention to the conditions of students, so that by studying online students do not feel burdened with the many assignments for each session or each subject, but rather a way for students or students to study independently from the modules provided.

Discussion topics created by students encourage students to participate more than discussion topics created by the teacher, because students are more interested in topics that interest them (Zulfikar et al., 2019). The use of online mode of learning in learning will have a positive impact on both institutions, lecturers, and students (Isman, 2017). These benefits will provide benefits to each party, namely the institution can overcome class limitations if lecture classes are lacking if lectures are held face to face. Complaints so far can be resolved with online learning; Lecturers can use their free time to do research and community service. The lack of lecturers conducting research and community service so far is allegedly due to a lack of time. With lots of free time, all this time complaints can be overcome; and students, especially students who study while working are very helpful because they don't need to come to campus to study via the internet. Online learning can be done anytime and anywhere. In addition, it can also overcome cost limitations because online learning is more cost-effective.

The evaluation of learning effectiveness, assessed through four indicators encompassing insurance quality, instructional appropriateness, incentives, and time allocation, reflects a positive and highly satisfactory outcome. This assessment serves as an important endeavor to gauge the effectiveness of online PPG learning using the LMS SPACE. The ultimate outcome, which can be observed through the pass rate of completing PPG activities online, is greatly influenced by the effectiveness of the learning process. The extent to which learning is effective directly impacts the graduation rate of successfully completing the program.

On the part of the government, the Director of Islamic Religious Higher Education at the Directorate General of Islamic Education at the Ministry of Religion reported that In-service PPG for Ministry of Religion teachers in 2021 will be implemented in two batches. Each batch has its own existing condition to report in terms of pass rate. For batch I, the pass rate reached 57.66%. While Batch II has a passing percentage of 77.46%. it can be seen that the fiust batch has lower percentage in terms of pass rate. So, the national average is 67.56%. The graduation results of students participating in PPG in 2021 at the three tertiary institutions which are the research locations are presented in Table 4.

Table 4. In-Service PPG Graduation Rates in 2021

Universities	Number of participants	Graduated	Not yet graduated
UIN Sunan Gunung Djati Bandung	653	566	87
UIN Sunan Ampel Surabaya	505	415	90
IAIN Salatiga	241	209	32
Total	1399	1190	209

Table 4 shows the graduation rate of professional teacher education through online learning with a total of 1399 participants, 85.06% of PAI students of passed PPG and are entitled to receive a teacher professional certificate. This graduation rate exceeds the national average of 67.56%. This shows that PPG through online learning is very effective. The following data summarizes the results of interviews with PPG managers in Position with the question, "*How is the effectiveness of the PPG using SPACE?*". Implementation of PPG in a position using the SPACE application can save costs and accommodation according to the geographical area of Indonesia. Learning is more challenging and self-motivating to be more technologically literate and more able to use and utilize technology in the learning process. "What are the positive effects of learning carried out online?". Studying online is easier & more economical. It is fun because it can be done remotely, you do not have to separate from your family, and you still go to school to work. "What are the obstacles in online PPG In-service learning? Network constraints, the sound is not clear when video conferencing with lecturers, lack of optimal guidance between lecturers and students regarding assignments given, so it is difficult to ask questions or confirm material that has been delivered, and less able to manage time properly because it has to be carried out simultaneously with teaching assignments.

PPG student graduation results were subsequently given certificates as professional teachers with a national average of 67.56% and a graduation rate of 85.06% at UIN Sunan Gunung Djati Bandung, UIN Sunan Ampel Surabaya and IAIN Salatiga. This is an achievement for PPG or LPTK managers in terms of PPG governance and management and the students themselves as PPG participants. This pass rate is one of the study materials and indicators of successful implementation of PPG activities in a position using LMS SPACE in terms of perceived usefulness and ease of use.

The Effect of Perceived Ease of Use and Perceived Usefulness on The Effectiveness of Learning

To find out whether or not there is an effect of perceived ease of use (x_1) and perceived usefulness (x_2) as independent variables on the effectiveness of learning as the dependent variable, the data is calculated using the STATA 13 application, before calculating the effect of the independent variable with the bound, an assumption test is first carried out classic.

Normality test

If sig > 0.05 then the data is normally distributed

If sig < 0.05 then the data is not normally distributed

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            Shapiro-Wilk W test for normal data

    Variable  |     Obs        W         V          z      Prob>z

    Easeofuse |     711    0.99891      0.504     -1.674    0.95293
   Usefulness |     711    0.65045    161.669     12.415    0.00000
 Effectiven~s |     711    0.88628     52.598      9.674    0.00000
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Figure 1. Data Normality Test

Based on Figure 1. it can be seen that the probability value for the (x_1) variable is 0.95293 > 0.05 the data is normally distributed, for the (x_2) variable it is 0.0000 <0.05 and for the Y variable it is 0.0000 <0.05 the data is not normally distributed.

a. Multicollinearity Test

   If the tolerance value (1/VIF) < 0.1 or VIF value < 10 then it is declared "multicollinearity does not occur".

   If the tolerance value (1/VIF) < 0.1 then it is stated "multicollinearity occurs".

Variable	VIF	1/VIF
Easeofuse	1.01	0.986030
Usefulness	1.01	0.986030
Mean VIF	1.01	

Figure 2. Multicollinearity Test

Based on Figure 2, it can be seen that the VIF value of the (x_1) variable is 0.986 <10 or the tolerance value (1/VIF) is 1.01 > 0.1, for the VIF variable (x_2) value it is also obtained at 0.986 <10 or the tolerance value (1/VIF) of 1.01 > 0.1, so it can be concluded that there is no multicollinearity in the data or it can be said that it passes the multicollinearity test.

b. Uji Heteroskedastisitas

   If sig > 0.05 then there is no heteroscedasticity

   If sig < 0.05 then there is heteroscedasticity

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of Effectiveness

        chi2(1)      =      62.14
        Prob > chi2  =    0.0000
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Figure 3. Heteroscedasticity Test

Based on Figure 3., the prob value is 0.00 <0.05, it can be concluded that there is heteroscedasticity (did not pass the heteroscedasticity test). Based on the classical assumption test, it can be concluded that only perceived ease of use (x_1) is normally distributed, multicollinearity does not occur, but heteroscedasticity occurs.

Source	SS	df	MS			
				Number of obs	=	711
				F(2, 708)	=	61.34
Model	77.5600152	2	38.7800076	Prob > F	=	0.0000
Residual	447.598916	708	.632201859	R-squared	=	0.1477
				Adj R-squared	=	0.1453
Total	525.158931	710	.739660466	Root MSE	=	.79511

Effectiven~s	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Easeofuse	.1544063	.0399869	3.86	0.000	.0758992	.2329133
Usefulness	.7865542	.0798358	9.85	0.000	.6298109	.9432975
_cons	8.49728	.8182961	10.38	0.000	6.890703	10.10386

Figure 4. Regression Analysis Test

Based on Figure 4. the linear regression equation Y=8.497+0.154 x_1+0.786 x_2 + e

Furthermore, to determine the effect of perceived ease of use (x_1) and perceived usefulness (x_2) on the effectiveness of learning, the hypothesis is stated as follows:

H_0 = There is no significant effect of perceived ease of use and perceived usefulness on the effectiveness of learning

H_1 = There is significant effect of perceived ease of use and perceived usefulness on the effectiveness of learning

Based on table 4, it is obtained that the value of F count = 61.34 > F table = 3.01, so that H_1 is accepted or there is significant effect of perceived ease of use and perceived usefulness on the effectiveness of learning. To find out each effect of perceived ease of use and perceived usefulness on the effectiveness of learning, the hypothesis is stated as follows:

H_0 = There is no effect of perceived ease of use on the effectiveness of learning

H_1 = There is effect of perceived ease of use on the effectiveness of learning

The t test value is 3.86 > from t table 1.96, so that H_1 is accepted or there is an influence of perceived ease of use on the effectiveness of learning. Furthermore, to determine the effect of perceived usefulness on the effectiveness of learning, the hypothesis is stated as follows:

H_0 = There is no effect of perceived usefulness on the effectiveness of learning

H_1 = There is effect of perceived usefulness on the effectiveness of learning

The t test value is 9.85 > from t table 1.96, so that H_1 is accepted or there is an influence of perceived usefulness on the effectiveness of learning. From the hypothesis test it can be concluded that there is an effect of perceived ease of use on the effectiveness of learning and there is an effect of perceived usefulness on the effectiveness of learning. To determine the magnitude of the influence between variables, it can be seen from the coefficient of determination of the influence of the variables x_1 and x_2 on the variable y of 0.1477. This means that 14.77% of the variables perceived ease of use and perceived usefulness affect the effectiveness of learning.

The acceptance of online learning system by users comprises two key aspects: perceived ease of use and perceived usefulness. These aspects are integral components of the Technology Acceptance Model (TAM), which focuses on the perceived benefits and ease of using the LMS application adopted by PPG students. According to existing literature, the widely accepted hypothesis regarding the influence of perceived usefulness and perceived ease of use is well-documented (Rahmi, et al., 2018). If students exhibit a positive response towards both perspectives, it signifies that the LMS application effectively aids in online PPG learning. The Ministry of Religion's implementation of online PPG for PAI students is designed to accommodate the professional development of teachers while they fulfill their teaching responsibilities in classrooms. Effective online learning directly impacts learning outcomes, which aligns with the results of the multiple linear regression analysis test indicating a significant influence of perceived ease of use and perceived usefulness on learning effectiveness. Despite encountering obstacles during online learning, students find the LMS application, specifically the SPACE platform, easy to use. This ease of use ultimately contributes to optimal learning outcomes.

CONCLUSION

The study aims to assess student responses regarding the perceived ease of use and perceived usefulness of the LMS SPACE in online PPG learning, as well as examine the effects of perceived ease of use and perceived usefulness on learning effectiveness. The results of the research demonstrate that the utilization of SPACE in online learning brings about numerous benefits and has a positive impact on the overall learning experience. The user-friendly nature of SPACE, coupled with its perceived usefulness, significantly contributes to the effectiveness

of online learning, accounting for a substantial 14.77% influence. In conclusion, the study confirms that SPACE facilitates user-friendly online learning, provides various advantages, and directly affects the quality of education. The perceived ease of use and perceived usefulness of SPACE play a crucial role in determining the efficacy of online learning, as supported by the findings of the research.

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