The success Evaluasion of Merdeka Mengajar Platform (PMM) Implementation in Purbalingga Regency Using HOT-Fit Model

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Abstract.

The industrial 4.0 revolution increasingly develops. It also affects the education field. This issue can be used to improve the quality of education by improving teachers quality. The Merdeka Mengajar platform (PMM) is used to improve the quality of teachers in implementing the Merdeka curriculum (Independent Platform). When it is implemented, teachers have difficulty to adapt the independent teaching platform and not all teachers understand technology. The purpose of this research is to analyze the factors that influence the successful implementation of the PMM using the Hot fit method which assesses system success from the aspects of human, organization and technology. The research sample was 220 vocational high school teachers in Purbalingga Regency. The results of this research can be concluded that all variables contained in the Hot Fit model. They are Service Quality, System Quality and Information Quality, System Use and User Satisfaction. Structure and Environment have a positive and significant effect on the successful implementation of the PMM used by vocational teachers in Purbalingga Regency. The Research Model in this study has a level of feasibility and accuracy of 71.6%, while the rest is influence the successful implementation of the PMM in Purbalingga Regency.

Keywords: Model Hot Fit, Platform Merdeka Mengajar, Success of the System,

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INTRODUCTION

The industrial 4.0 revolution increasingly develop and affect various fields of life, one of them is education. Along with the development of existing technology, teachers are required to be able to make maximum use of it and keep up with the development of digitalization. Because teachers are one of the important factors and as the spearhead that greatly affects the quality of education [1]. However, the competence of teachers in Indonesia is currently still not maximized so It can't produce quality resources [2]. In an effort to improve the quality of these resources, there are two important aspects, learning methods and media. One form of government efforts in improving the quality of education in Indonesia is the change in curriculum from K-13 to an independent curriculum, where students not only focus on classroom learning but also participate in practical learning [3] [4]. The Independent Curriculum focuses on the free transformation of knowledge and frees teachers in determining learning media according to student conditions [5] [6].

In improving the quality of teachers in implementing the independent curriculum, the government provides Merdeka Mengajar Platform (PMM) which teachers can use in supporting learning [7]. PMM in the independent learning curriculum has three main functions, namely assisting teachers in the teaching process, providing learning facilities, and encouraging creativity [8]. Features in the PMM application include inspirational videos, self-training, proof of work, community and teaching and learning activities consisting of student assessments and teaching tools [9]. Inspirational videos conducted by the Ministry of Education and Culture and experts are used as a reference for improving competence as educators, independent training consists of various short training materials that can be done independently, anywhere, and anytime. Proof of work is used to present achievements, competencies, and achievements in the teaching profession and school principals, forums for discussing and sharing best practices that can be commented on, and various educational communities for teachers [10].

Through these available features, teachers are expected to improve their competence by innovating according to challenges and best practices and getting access to the latest learning materials [11]. To access this platform, teachers are also given a belajar.id account that can be linked, but in reality there are still many teachers who have not downloaded or linked their belajar.id account to this application and only limited to logging in without exploring the menu inside [12]. While the appeal of KEMENDIKBUD RISTEK is that all teachers must link their belajar.id account to PMM and utilize it to learn, teach, and work. The obstacles experienced by teachers on the PMM platform when adapting to the curriculum transition period from the emergency curriculum to the new curriculum or the independent curriculum and not all teachers understand technology, where the implementation is supported by mastery of the PMM [13], so it is necessary to analyze the factors that influence the success of the PMM.

To determine the success of e-learning system implementation, the influence between the benefits caused by Human, Organization, and Technology [14]. From the technology aspect, there are three components (variables) discussed, namely System Quality, Information Quality, and Service Quality. From the Human aspect, there are two components (variables) discussed, System Use and User Satisfaction, while from the organizational aspect there are two components (variables) including Structure and Environment. This Hot-Fit method has also been used by other researchers, with good results and success rates to determine its success [15]. This Hot-Fit model has a broad view compared to other success methods [16].

The application of the Hot-fit model in e-learning has a significant impact on user satisfaction assessments through the perceptions of users who feel its benefits [17]. It shows that the human, organization, and technology components have a compatible relationship that the information system has good quality whose application is supported by the organization [18]. The results showed that the application of the HOT model in evaluating e-learning at UINSU Computer Science Study Program was effective in identifying strengths and weaknesses from human, organizational, and technological aspects, and providing significant improvement recommendations [19]). Service quality has an impact on user satisfaction, user satisfaction has an impact on system usage and net benefits, and organizational structure has an impact on net benefits, so this needs to be maintained [20]. The variable that is very influential on the successful implementation of the ICT e-learning system at Trinita University is the benefit variable [21].

This research was conducted with the aim of analyzing the factors that influence the successful implementation of the PMM so the variables that influence the successful implementation of the PMM in Vocational School in Purbalingga Regency are known.

METHODS

This research discusses the factors that influence the success of the PMM which is used to improve the quality of educator competence in Indonesia. The analysis was carried out using the Hot Fit Model which is a combination of the DeLone and McLean Model and the IT Organization Fit Model with aspects of system assessment based on four important factors, namely Human, Organization, Technology and Benefit. In the Human aspect, there are two variables namely System Use and User Satisfaction, while the technology aspect has three variables namely Service Quality, System Quality and Information Quality, then in the organization aspect there are 2 variables namely Structure and Environment [22] [17].

The population in this research were Vocational School teachers in Purbalingga Regency as PMM users, while the Quota sampling technique was used to determine the respondents who were used as sampling [23]. The Quota Sampling technique determine the minimum amount of sampling used in the research. The number of samples is at least a minimum of five times the number of questions given to respondents [24] [25]. This study has 25 questions given to respondents, so the minimum number of samples that can be used is 125 respondents (5×25). The questionnaire was given to teachers through the google forms platform starting from July 2024 to September 2024, the number of samples that could be collected was 220 respondents, so it was feasible to use as a sample because it exceeded the minimum limit required. This study analyzes the factors that influence the successful implementation of the PMM using the Hot Fit method with the concept of the research model shown in Figure 1.



Figure 1. Research Model

Data analysis is processed using Smart PLS 3 by conducting validity and reliability tests. Testing R Square and Goodness of Fit, while to determine the effect and significance of exogenous variables and endogenous variables using bootstrapping tests.

RESULT AND DISCUSSION

The number of respondents in this research were 220 vocational high school teachers in Purbalingga district who had filled out a questionnaire via google forms with the characteristics of the respondents as in Figure 2 and Figure 3. In Figure 2 the characteristics of respondents based on gender with details of 118 male (53.6%) respondents and 102 female (46.4%) respondents. In Figure 3 the characteristics of respondents based on age with details of 84 respondents aged 31-35 years (36.1%), 58 respondents aged 36-40 years (24.9%), 29 respondents aged 25-30 years (12.4%), 24 respondents aged 41-45 years (10.3%), 19 respondents aged 46-50 years (8.2%), 14 respondents aged 51-55 years (6%), and 5 respondents aged 56-60 years (2.1%).



Figure 2. Respondents by Gender



Figure 3. Respondents by Age

Evaluation of the Measurement Model (Outer Model)

Validity and reliability tests are used to assess the outer model. A construct's reliability and validity are good. If the AVE value is more than 0.05, convergent validity is present. Cronbach's Alpha values are used to determine reliability. If a construction's Cronbach's Alpha reliability is more than 0.7, it is considered consistent. According to Table 1, every indication has an AVE of greater than 0.5 and a Cronbach's Alpha of greater than 0.7. Thus, every construct is legitimate. System Use's Cronbach's Alpha value is 0.602, which is less than 0.7. 0.6 is still deemed acceptable [26]. As a result, latent variable structures have achieved internal consistency.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Environment	0.763	0.763	0.863	0.678
Information Quality	0.869	0.869	0.911	0.719
Net Benefit	0.832	0.846	0.899	0.750
Service Quality	0.774	0.778	0.869	0.689
Sturcture	0.778	0.817	0.868	0.687
System Quality	0.748	0.752	0.856	0.664
System Use	0.598	0.598	0.788	0.554
User Satisfaction	0.801	0.809	0.883	0.716

Table 1. Validity And Reliability Test Result

Evaluation of the Structural Model (Inner Model)

In this study, the internal model evaluation includes R Square and Goodness of Fit.

1. A metric used to forecast the accuracy model is R Square. R-squared measures the combined impact of exogenous and endogenous constructs; a value of 0.67 is considered strong, a value of 0.33 is considered moderate or medium, and a value of 0.19 is considered weak [27] [28]. Table 2 shows that User Satisfaction is 0.494 which is categorized as Moderate. This means that System Quality, Information Quality, and Service Quality have an effect of 49.4% and the rest is influenced by other variables. The System Use construct is 0.480 which is categorized as Moderate. This means that System Quality, Information Quality, and Service Quality have an effect of 48% and the rest is influenced by other variables. The System Use construct is 0.512 which is categorized as moderate. This means that System Use, User Satisfaction, Structure, and Environment have an effect of 51.2% and the rest is influenced by other variables.

Table 2. R Square Result						
	R Square	Information				
Net Benefit	0.512	Moderat				
System Use	0.480	Moderat				
User Satisfaction	0.494	Moderat				

2. The Goodness of Fit is used to show the overall accuracy of the model between the outer model and the inner model. The accuracy of the model is determined by looking at the value of the NFI. The value ranges from 0 to 1. The proposed research model has good accuracy if the value is close to 1 [29]. The NFI value of 0.716 means that the proposed model has an accuracy of 71.6%.

Table 3. Goodness of Fit Result					
	Saturated Model	Estimated Model			
SRMR	0.072	0.079			
d_ULS	1.681	2.021			
d_G	0.675	0.714			
Chi-Square	872.471	894.536			
NFI	0.716	0.709			

Hypothesis tests

To determine the effect and significance of exogenous variables on endogenous variables, the bootstrapping test is carried out, if the P value is smaller than 0.05 or the T statistical value> 1.97 at 5% significance ($\alpha = 0.05$; two-sided test). then it can be concluded that there is an influence between exogenous variables on

endogenous variables. Table 4 is the path coefficient of the research model; Figure 4 is the bootstrapping test results of the research model.

Table 4. Result Of Lath Coefficient								
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values			
Environment -> Net Benefit	0.219	0.220	0.066	3.307	0.001			
Information Quality -> System Use	0.228	0.222	0.074	3.079	0.002			
Information Quality -> User Satisfaction	0.163	0.162	0.066	2.454	0.014			
Service Quality -> System Use	0.411	0.417	0.064	6.394	0.000			
Service Quality -> User Satisfaction	0.179	0.180	0.063	2.823	0.005			
Sturcture -> Net Benefit	0.277	0.281	0.062	4.439	0.000			
System Quality -> System Use	0.185	0.187	0.077	2.403	0.017			
System Quality -> User Satisfaction	0.472	0.476	0.063	7.478	0.000			
System Use -> Net Benefit	0.193	0.193	0.069	2.808	0.005			
User Satisfaction -> Net Benefit	0.235	0.230	0.081	2.914	0.004			

Table 4. Result Of Path Coefficient



Figure 4. Bootstrapping Output from Research Model

H1: Service Quality variables have a positive influence and significant impact on System Use From Figure 4. the Service Quality variable affects System Use by having a statistical T value > 1.97 and a P value <0.05. This shows that the Service Quality variable has a positive influence and significant impact on System Use. Therefore, the first hypothesis (H1) is accepted because good Service Quality in the PMM can increase user use of the system. The main contribution is in the capability of the system and the visual form of the display.

H2: Service Quality variable has a positive influence and significant impact on User Satisfaction From Figure 4. Service Quality has an influence on User Satisfaction. The statistical T value > 1.97 and the P value <0.05. This shows that Service Quality has a positive influence and significant impact on User Satisfaction. Thus, the second hypothesis (H2) is accepted because PMM provides good Service Quality so that it can increase user satisfaction. Several components such as reliability, responsiveness, and empathy play an important role in increasing user satisfaction.

H3: System Quality variable has a positive and significant impact on System Use.

From Figure 4. the influence of the System Quality variable has an influence on System Use has a statistical T value > 1.97 and a P value < 0.05. This shows that System Quality has a positive and significant influence on System Use. Thus, the third hypothesis (H3) is accepted because the PMM is easy to use and accepted

by users. Several components of good system quality, overall the application is in accordance with expectations which have an effect on system use.

H4: System Quality variable has a positive influence and significant impact on User Satisfaction. From Figure 4. System Quality has an influence on User Satisfaction with a statistical T value > 1.97 and a P value < 0.05. This shows that the System Quality variable has a positive and significant influence on User Satisfaction. Thus, the fourth hypothesis (H4) is accepted because the PMM used in learning, users can feel that the application is user friendly. This means that the interface and functionality are designed to make it easier for users and increase user satisfaction.

H5: Information Quality variable has a positive influence and significant impact on System Use From Figure 4. the Information Quality variable affects System Use with a statistical T value > 1.97 and a P value < 0.05. This means that the Information Quality variable has a positive and significant effect on System Use. Thus, the fifth hypothesis (H5) is accepted because the PMM provides good information quality to encourage more effective system use among users.

H6: Information Quality variable has a positive and significant impact on User Satisfaction. From Figure 4. the effect of Information Quality variables on user satisfaction reaches a statistical T value > 1.97 and P Value < 0.05. This shows that the Information Quality variable has a significant positive effect on User Satisfaction. Thus, the sixth hypothesis (H6) is accepted because when the information presented in the system is easy to understand, relevant, and information is easily accessible so that it can increase user satisfaction.

H7: System Use variable has a positive and significant impact on Net Benefit.

From Figure 4. System Use affects Net Benefit with a statistical T value > 1.97 and a P value < 0.05, while the value of the structural model evaluation is 0.005 < 0.05. This shows that System Use has a positive and significant effect on Net Benefit. This means that the seventh hypothesis (H7) is accepted. The acceptance of this hypothesis is because the overall system is in accordance with user expectations and users can feel the benefits directly.

H8: User Satisfaction variable has a positive influence and significant impact on Net Benefit. From Figure 4. the effect of the user satisfaction variable on Net Benefit has a statistical T value > 1.97 and a P value < 0.05. This shows that the User Satisfaction variable has a positive and significant effect on Net Benefit. Thus, the eighth hypothesis (H8) is accepted because the data obtained by users is valid from the Ministry of Education and Culture and is not difficult to understand by users so that users can innovate and explore more deeply about appropriate learning and apply it to students.

H9: Structure variable has a positive influence and significant impact on Net Benefit From Figure 4. the effect of the Structure variable on Net Benefit has a statistical T value > 1.97 and a P value <0.05. This shows that the Structure variable has a positive and significant effect on Net Benefit. Thus, the ninth hypothesis (H9) is accepted because an increase in the organizational structure aspect can increase the benefits obtained from the information system or application implemented.

H10: Environment variable has a positive influence and significant impact on Net Benefit.

From Figure 4. the effect of the Environment variable on Net Benefit has a statistical T value > 1.97 and a P value <0.05. This shows that the Environment variable has a positive and significant effect on Net Benefit. Thus, the tenth hypothesis (H10) is accepted because a supportive environment, both in social and physical contexts, can improve company performance. A healthy and positive environment encourages productivity and innovation, which in turn has an impact on increasing net benefits.

CONCLUSION

Based on the data obtained from the questionnaire and analysis, it can be concluded that all variables contained in the Hot Fit model have a positive and significant effect on the successful implementation of the PMM used by Vocational School teachers in Purbalingga Regency. Meanwhile, the combined effect of exogenous constructs on endogenous constructs on the Net Benefit, System Use and User Satisfaction variables has the ability to moderate influence. The Research Model in this study has a level of feasibility

and accuracy of 71.6%, while the rest is influenced by other variables not contained in this study. With this research, we can find out the factors that influence the successful implementation of the PMM in the Purbalingga Regency area. Further research is recommended to look for other variables that affect the success of the Implementation of the PMM and take respondents from all levels of education.

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