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Research Article

Evaluating Readiness Level of Education Personnel in Implementing Online Learning During the COVID-19 Pandemic at Universitas Gadjah Mada

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Abstract.
This study was conducted at Universitas Gadjah Mada (UGM) and involved administrative staff who worked and participated in online learning activities during the COVID-19 pandemic. A total of 200 respondents from various faculties and schools completed a questionnaire via Google Forms, providing insights into their competencies, perceptions, innovation, and the availability of supporting facilities for online learning. The findings indicate that UGM's administrative staff possessed adequate personal competencies to support online learning, held positive perceptions of their roles, demonstrated the ability to innovate in adapting to online systems, and were supported by sufficient institutional facilities. Data analysis revealed that supporting facilities significantly influenced readiness for online learning, contributing 63.1% to overall preparedness.

Keywords: innovation, online learning, pandemic, perception, supporting facilities

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1. Introduction

In order to suppress the transmission of Covid-19, the Indonesian government issued a policy related to large-scale social restrictions through Government Regulation Number 21 of 2020 concerning Large-Scale Social Restrictions in the context of Accelerating the Handling of Corona Virus Disease 2019 (Covid-19) which was stipulated on 31 March 2020. These social restrictions are accompanied by recommendations for the implementation of physical distancing, learning from home, working from home, and worshiping from home.

In the education sector, the government through the Ministry of Education and Culture (MoEC) issued Circular Letter No. 15/2020 on Guidelines for Organising Learning from

Home during the COVID-19 emergency [1]. The policy issued is intended for all levels of education, ranging from primary, secondary, to tertiary schools. The implementation of teaching and learning activities is carried out using an online system starting from March 2020 [2]. The learning system is carried out without direct face-to-face meetings, but is carried out by a distance learning system [3]. With a distance learning system, students are not required or obliged to come to school or campus to carry out learning.

The effectiveness of online learning implementation in higher education is highly dependent on the readiness of information and communication technology (ICT) [4] infrastructure and the ability of human resources (HR) of the university itself. As the characteristics of online learning [5], which are as follows: 1) Learning content must be relevant to the learning objectives; 2) Learning is carried out using instructional methods, such as presentation of examples and exercises to enhance learning; 3) Provide learning media such as words and pictures to convey learning materials; 4) Allow for direct teacher-centred learning or synchronous learning, and independent or asynchronous learning design; 5) Online learning builds understanding and skills related to individual learning objectives and improves group learning performance.

The implementation of online learning requires the ability of faculty human resources, namely teaching staff (lecturers) and education staff (academic staff) to integrate information and communication technology into the learning process so that learning is still carried out well in the middle of the Covid-19 pandemic [6]. The emergence of the Covid-19 pandemic which has an impact on sudden changes in the learning system requires the readiness of faculty human resources in organizing online learning [7]. Therefore, this study was conducted to determine the readiness of faculty members, especially education personnel (academic staff) at Universitas Gadjah Mada in organizing online learning during the Covid-19 pandemic.

2. Materials and Methods

The targeted research object is education personnel (academic staff) at Universitas Gadjah Mada who are directly or indirectly involved in the implementation of online teaching and learning activities during the COVID-19 pandemic. The participating education personnel are education personnel who work in faculties and schools. The number of respondents who were willing to fill out the questionnaire was 200 people. The research time is 6 months, starting from May to November 2021.

Data collection was conducted online using Google Forms distributed to faculties and schools within Universitas Gadjah Mada. The respondents then gave their opinions on the form by answering / filling in several questions and statements that represent the parameters measured, namely Competence, Perception, Innovation, and Facility Support to strengthen the Readiness of the Online Learning Process.

The analysis method used in this research is a quantitative method which is a summary of the results of data collection using Google Form and continued analysis using SmartPLS, which is intended to determine the relationship between parameters / factors with the readiness of the teaching and learning process [8].

3. Results and Discussion

It should be noted that the number of education personnel (academic staff) at Universitas Gadjah Mada as of October 2021 is 2665 people and works in 18 faculties and 2 schools. It can be seen that the distribution of academic staff at UGM in the largest order is in the Faculty of Public Health Medicine and Nursing 17.26%, Faculty of Engineering 13.85%, Faculty of Economics and Business 8.48%, Vocational School 8.36% and Faculty of Mathematics and Natural Sciences 5.22% of the total number of academic staff at UGM.

The majority of UGM academic staff have a high school / vocational high school graduate background of 43.75%, 17.33% diploma graduates, 29.82% S1 graduates and 5.81% S2 and professional graduates. This condition shows the basic potential of academic staff which plays an important role in the implementation of teaching and learning activities, research at the UGM campus.

3.1. Respondent Demography

Respondents who are education personnel at Universitas Gadjah Mada and are willing to fill out this questionnaire are 200 people who work in faculties and schools. Based on the results of the answers or responses from the education staff who filled out the questionnaire, it can be seen that the majority of those who filled out were men as much as 60%.

Meanwhile, based on the age distribution, the majority are in the age range of 40-50 years as much as 43.4% and have an undergraduate educational background (S1) 38.4%. Only 11.3% have an information technology education background and only 34.5% work

in academic and student affairs. Meanwhile, most of them have worked at UGM for 10-20 years

3.2. Personal Competencies

Personal competence describes how education personnel at UGM have the ability and understanding of online teaching and learning activities. Most UGM education personnel can carry out these activities, even before online activities are carried out they have mastered and understood the use of equipment (gadgets) that support online learning. They also understand synchronous and asynchronous online learning.

In general, 93% of education personnel have devices and can use them properly and utilize the internet network. As many as 73% stated that they had sufficient information technology skills to carry out online activities. As for online learning, 70.7% understand it well, but for asynchronous online learning, only 58.5% understand it. However, 87.5% are willing and ready to support online learning activities.

3.3. Personal Perception

Personal perceptions are explained through how education personnel view online teaching and learning activities during this pandemic [9]. This is seen from the various activities carried out, then they are asked to provide an assessment, which can then be seen as the personal perception of UGM education personnel. As many as 82.5% of education personnel think that online learning activities are very supportive of teaching and learning activities during the pandemic. As many as 78% explained that online teaching and learning activities are very suitable for implementation during a pandemic in faculties/schools in the UGM environment.

In personal perceptions, education personnel also provide an assessment of the conditions of online Bromo Mandiri Cooperative, especially those related to students. In general, education personnel have a good-very good perception in running and supporting online Bromo Mandiri Cooperative at UGM.

3.4. Personal Innovation

In this personal innovation, it is shown how education personnel carry out innovations to anticipate current and future developments in online Bromo Mandiri Cooperative.

Education personnel (87.4%) stated that they easily adapted to online Bromo Mandiri Cooperative that had to be carried out during this pandemic. As many as 84.4% stated that they were able to take advantage of the platforms used for online Bromo Mandiri Cooperative, so they were able to perform their online tasks well. Most education personnel (79.4%) stated that they could strengthen their knowledge and skills to support synchronous and asynchronous online learning.

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3.6. Supported Facilities

In this supporting facility, it will be seen how the institution's support for implementing online Bromo Mandiri Cooperative as a whole. The things that are seen include: the institution prepares equipment (computers/laptops, etc.) for online learning (79.3% of academic staffagreed); 91.9% stated that the institution supports and assists in the implementation of online Bromo Mandiri Cooperative; as many as 72.9% stated that the institution can pay the costs of organizing online Bromo Mandiri Cooperative; 92.5% stated that their leaders strongly support the implementation of this online Bromo Mandiri Cooperative.

3.7. Institution Readiness

This study also looked at the readiness of institutions in dealing with and organizing online Bromo Mandiri Cooperative activities and how they prepare for learning after the pandemic has passed. Some of the things asked about the readiness of institutions include: a. Institutions organize information technology training for education personnel

to strengthen their skills and knowledge of IT, so that they can better support online learning (77.0% agree-strongly agree); b. The institution provides an adequate budget for the implementation of this online Bromo Mandiri Cooperative (74.4% agree strongly agree); c. The institution plans to implement online learning after the pandemic has passed and only 44.5% strongly agreed.

3.8. Data Analysis

Data analysis using SmartPLS consists of two stages. The first stage is to assess the instrument to test the validity and reliability of the instrument. The second stage is to conduct a model that shows the relationship of the research variables [10].

Instrument analysis is carried out by testing the loading value of each indicator to the latent variable it represents. The minimum loading value is 0.7. In the first iteration, there are several indicators whose loading value is less than 0.7. These indicators are one indicator from Competencies, namely Komp1 (loading value = 0.585); two indicators from Perception, namely Persp5 (loading value = 0.681) and Persp7 (loading value = 0.605); one indicator from Readiness, namely Ready3 (loading value = 0.503). Since there are indicators that do not meet the minimum value requirement of 0.7, these indicators are considered unreliable. Thus, in the second iteration, the four indicators above were not included in the analysis. In the second iteration, all indicators had a minimum loading value of 0.7.

The cross-loading test is carried out by comparing the loading value of an indicator to the latent variable it represents. This value must be greater than the loading value of the same indicator to other latent variables. Table 1 shows the loading and cross-loading values. From the shaded part, it can be seen that the loading value of the indicator to the latent variable it represents is greater than 0.7. Table 1 also shows that the requirement of cross-loading is fulfilled. Thus, based on the results shown in Table 1, the loading and cross-loading of the indicators fulfill the requirements.

The validity and reliability of the instrument are assessed using the composite reliability and average variance extracted (AVE) values [11]. Composite reliability must be at least 0.7 and the AVE value must be at least 0.5. Table 2 shows the composite reliability and AVE values that meet the minimum requirements. Thus, the instrument is declared to have an adequate level of validity and reliability.

Table 1: Values of Loading and Cross-Loading.

	Facilities	Innovation	Readiness	Competencies	Perception
Fas1	0.812	0.488	0.617	0.369	0.530
Fas2	0.818	0.476	0.639	0.350	0.572
Fas3	0.819	0.398	0.715	0.279	0.425
Fas4	0.771	0.465	0.556	0.326	0.603
Ino1	0.469	0.888	0.341	0.576	0.525
Ino2	0.541	0.921	0.353	0.627	0.575
Ino3	0.491	0.856	0.315	0.637	0.472
Komp2	0.447	0.667	0.245	0.745	0.440
Komp3	0.233	0.537	0.127	0.848	0.332
Komp4	0.267	0.523	0.177	0.855	0.373
Komp5	0.332	0.527	0.276	0.869	0.372
Persp1	0.470	0.410	0.295	0.293	0.738
Persp2	0.483	0.410	0.408	0.304	0.802
Persp3	0.603	0.559	0.478	0.480	0.846
Persp4	0.501	0.521	0.358	0.401	0.734
Persp6	0.446	0.369	0.407	0.299	
Siap1	0.586	0.361	0.818	0.311	0.483
Siap2	0.755	0.302	0.899	0.173	0.416

Table 2: Values of Cronbach's Alpha, Composite Reliability, and AVE.

	Composite Reliability	AVE
Facilities	0.881	0.649
Innovation	0.918	0.789
Readiness	0.850	0.739
Competencies	0.899	0.690
Perception	0.879	0.594

Model analysis was conducted to assess the relationship between the variables in the research model. As explained above, this study examines the factors that influence Learning Readiness. The equation used is:

$$Y = a1\ X1 + a2X2 + a3X3 + a4X4 + \text{constant} \quad (1)$$

with:

Y = Learning Readiness

X1 = Competence

X2 = Perception

X3 = Innovation

X4 = Facility support

a1 ... a4 = path coefficient

The data obtained from the survey were tested using a significance level (α) = 0.05. The results of the analysis of the three equations above are presented in Table 3.

TABLE 3: Path coefficient (β), t value and p value (α = 0.05).

Code	Code Path	Coefficient Path	Value p	Value p
a_1	Competence → Learning Readiness	-0.021	**0.725**	**0.725**
a_2	Perception → Learning Readiness	0.043	**0.490**	**0.490**
a_3	Innovation → Learning Readiness	-0.096	**0158**	**0158**
a_4	Supported Facilities → Learning Readiness	0.824	**0.000**	**0.000**

Table 3 shows the value of the path coefficient and its significance. The path coefficient written in the 'Path Coefficient' column is declared significant with the p value in the 'P value' column colored green. A red-colored p value means that the path coefficient is not significant. For example, the path coefficient for 'Competence' to 'Learning Readiness' is -0.021 with a p value = 0.725 (green color). This means that the variable Competence does not have a significant influence on the variable Learning Readiness [12].

By referring to the analysis results in Table 3, the equation obtained is:

Learning Readiness= 0.824*Supported Facilities + constant (2)

The value of R2 or coefficient of determination is 0.631. This shows that 63.1% variability of Learning Readiness is determined by Supported Facilities [13].

4. Conclusion

i. In general, education personnel at Universitas Gadjah Mada are ready to support the implementation of teaching and learning activities (Bromo Mandiri Cooperative) carried out since the start of the pandemic. They have adequate competence, personal perceptions that are in accordance with the implementation of online activities and are willing to innovate in order to follow and support online learning at UGM. They also stated that institutional support is quite good in preparing human resources, infrastructure and financing.

ii. The overall readiness level of Universitas Gadjah Mada in implementing online teaching and learning activities (Bromo Mandiri Cooperative) is good and some state that it is very good and based on data analysis conducted, it can be seen that what affects the level of institutional readiness, especially at UGM, is facility support. The level of personal competence, personal perception and personal invasion contributes quite well but not too significant. This can be due to the fact that education personnel have received training and assistance during the adjustment of the online Bromo Mandiri Cooperative process and will likely continue when the pandemic has passed.

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