

# **Students' Barriers to Participation in Online Tutorial**

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# Students' Barriers to Participation in Online Tutorial

## Abstract:

Online tutorials should have been the core of the student learning support services to realize Universitas Terbuka as the only cyber university in Indonesia. However, participation in the online tutorials was still not encouraging. For example, in 2018 for Educational Statistics course (PEMA 4210), there were only 3.53% of course participants took online tutorials compared to 73.95% who take face-to-face tutorial. This study aimed to identify barriers for students to participate in online tutorial. The method consisted of two stages. First, analyzing qualitative data which were gathered through open-ended questions to identify factors of the barriers. It revealed four factors, (1) information, (2) motivation, (3) technical, and (4) assistance. Second, developing 20 items' questionnaire based on the four factors and distributing it to students. A total of 237 students filled out the questionnaire. The data were then analyzed using Structural Equation Model (SEM) to validate the factors and analyze students' barriers to participate in online tutorial. The results of the analysis were used for recommendations to improve student participation in online tutorials.

**Keywords:** Online tutorial, barriers to participation, structural equation model.

## Introduction

An online tutorial is one of the students' learning support service provided by Universitas Terbuka (UT). Another learning support service is a face-to-face tutorial that has been introduced to students since UT was founded in 1984. Until now, the face-to-face tutorials are still the most popular learning support services for the students. One reason is that kinds of interaction is what they know ever since they were in pre-school (Sugilar, 2011). This explains why more students attended face-to-face tutorials than online tutorials. For example, for Educational Statistics course (PEMA 4210), Table 1 shows the number and proportion of students taking face-to-face tutorials compared to online tutorials.

PEMA 4210 course was delivered to students of several study programs, such as mathematics education, primary school teacher education, and early school teacher education. The face-to-face tutorial in PEMA 4210 course is not mandatory for the students. The students who participate in the online tutorial must pay the additional fee, beyond the tuition fee. The proportion of the students who participate on the online tutorial on average was 78.19%. Meanwhile, the proportion of student's participation in the online tutorial in average was only 2.21%, far below the proportion in the face-to-face tutorial. It is indeed surprising for the online tutorial is provided with no fee at

all. This raises questions that require answers, namely, what are the barriers for students to take online tutorials?

Table 1.  
Students' Participation in Face-to-face Tutorial and Online Tutorial (PEMA4210 Course)

Semester	Number of Students	The Proportion of Students take F-2-F Tutorial		The Proportion of Students take Online Tutorial	
		Number	%	Number	%
2016/2017.1	22,557	18,865	83.63	232	1.03
2016/2017.2	14,210	10,920	76.85	248	1.75
2017/2018.1	19,215	15,055	78.35	486	2.53
2017/2018.2	17,457	12,909	73.95	616	3.53
Average			78.19%		2.21%

## Method

This study uses a mixed method to answer questions what students' obstacles are to take part in online tutorials. The method implemented in this study consists of the following three steps.

First, a questionnaire asking what obstacles students have in attending online tutorial is distributed to students who are taking face-to-face tutorials. This questionnaire is an open question regarding obstacles that prevent students from taking online tutorials. The results of this questionnaire were then analyzed qualitatively to get an overview of the factors underlying students' obstacles to take online tutorials.

Second, based on literature reviews and the analyses results of of the first step, a questionnaire in the form of a Likert scale was developed to measure the level of student barriers in taking online tutorials.

Third, a sample of 237 students was filled out of the questionnaire developed to measure the level of barriers to online tutorial participation. The results of questionnaire entries were then analyzed with PLS-SEM uses Smart-PLS software. The use of PLS-SEM to overcome the constraints of the lack of a theoretical basis in building structural models and not fulfilling normal assumptions (Hair et al., 2016).

## Results and Discussions

### *a. Students' Opinion on Barriers to Participation in the Online Tutorial*

A qualitative descriptive analysis was carried out on students' written answers to open questions related to student barriers to following the tutorial. The grouping of 76 student written answers resulted in four student answer groups, namely (1) the barriers conveyed by 34 (44%) students related to the lack of online tutorial information, (2) barriers delivered by 15 (20%) students related to attitudes towards online tutorials, (3) barriers delivered by 20 (26%) students related to technical barriers at the time of starting the tutorial, and (4) barriers delivered by 7 (10%) students related to obstacles during the tutorial take place.

Some students' obstacles before following the online tutorial were revealed from students' response to an open question in the questionnaire. The hindrance includes information about online tutorials that don't reach students. The students expected that information should include the notion of online tutorials, benefits, and ratings in online tutorials, schedule of implementation of online tutorials, how to register online tutorials, and parties that can be contacted. A student wrote that information about online tutorials was felt to be very lacking, he wrote that since the first semester as a UT student until now after the sixth semester there was no explanation on how to follow the tutorial, the UT should go to the study group to explain the online tutorials. Information about the tutorial has been given face-to-face when the orientation of new student studies is carried out by UPBJJ. However, not all students can take part in these activities. Many students live in remote areas, making it difficult to go to the location of new student study orientation activities.

Although students may already have adequate information about online tutorials, some students have internal barriers to themselves in the form of lack of motivation to follow the tutorial. Based on the theory of expectancy-instrumentality-valence (Simone, 2015), motivation is a function of the perception of the benefits of following an online tutorial and the perceived ease of doing so. In this case, some students know the benefits of online tutorials, but consider it as difficult to follow. Or, students judge online tutorials as not useful even though they can use them. A student wrote that he considered face-to-face tutorials to be more effective than online tutorials for achieving learning goals. Another student wrote that he had problems with eye problems so he could not read through a computer screen.

Obstacles felt by students when carrying out online tutorials are related to procedures for registering participation in online tutorials as well as obstacles to slow internet speeds in certain areas. Students complain about the complexity of the stages to follow the online tutorial. A student wrote that he was interested in taking online tutorials, but before the implementation of the online tutorial, he could not activate his account. Other students complained about the difficulty of registering to participate in online tutorials.

Student barriers to starting the online tutorial above suggest the need for technical assistance provided by UT. Technical assistance is needed by students, whether they are going to take part in online tutorials or when students have taken part in the online tutorial. In this case, many students feel they do not know how to obtain technical assistance or do not even know that there is technical assistance provided by UT. A student wrote that he needed written guidance to use the online tutorial. The different thing was expressed by other students that at the time of the tutorial he could not find feedback from tutors regarding the tasks he was doing.

To complete the above findings in identifying student barriers in following online tutorials, the following are various research results that report several obstacles in participating in online learning. Palmer, Bowman, & Haroff (2013) identified technical, structural, and cultural as the barriers to part-time in online learning. Technical barriers include having no access to the internet or computer and a lack of computer skills. Structural barriers comprise some factors that are related to poverty and social marginal. Cultural barriers contain factors related to learned behavior from a community culture, such as learning style. Srichanyachon (2014) identified students' challenges to participate in online learning, namely problems with online systems and personal problems. Problems with online system connection errors, system complexity, communication convenience, and attractiveness. The personal problems of students consist of a lack of computer skills, internet skills, understanding the platform used for online tutorials (UT uses Moodle) and lack of money to support the cost of internet connection.

Based on a descriptive qualitative study of student answers to open questions and few previous research reports about participation in online tutorials, four factors were identified as students' barriers to participating in the online tutorials, namely: (1) lack of information about online tutorials, (2) low motivation of students to follow the tutorial online, (3) technical barriers to starting and implementing online tutorials, and (4) lack of support services felt by students. The four factors were then developed as a questionnaire with a Likert scale to measure the size of the students' barriers to taking online tutorials. For this reason, each factor was developed by a five-point statement of obstacles to follow the online tutorial so that all 20 items on the statement would be assessed by students as "Strongly Disagree" until "Strongly Agree".

#### *b. Structural Equation Model of Students' Barriers to Participation in Tutorial Online*

A questionnaire to measure student barriers to taking online tutorials was given to 327 students to fill out. Student fields were analyzed using a structural least square structural equation model (PLS-SEM) using Smart-PLS software (Ringle, Wende, & Becker, 2015). The reason for using PLS-SEM is primarily to overcome the weak theoretical model and abnormal assumption deviations (Hair, 2016). The results of the analysis in the form of diagrams are presented in Figure 1. Figure 1 described students' barriers to participation in online tutorials (Barriers) which were reflected in factors related to information about online tutorials, students' motivation to participate in online tutorials (Motivation), technical skills to get through the online tutorial (Technical), and availability of supports in online tutorial (Support). Each factor in Figure 1 was associated with several indicators or observed variables which were counted up from items in the questionnaire.

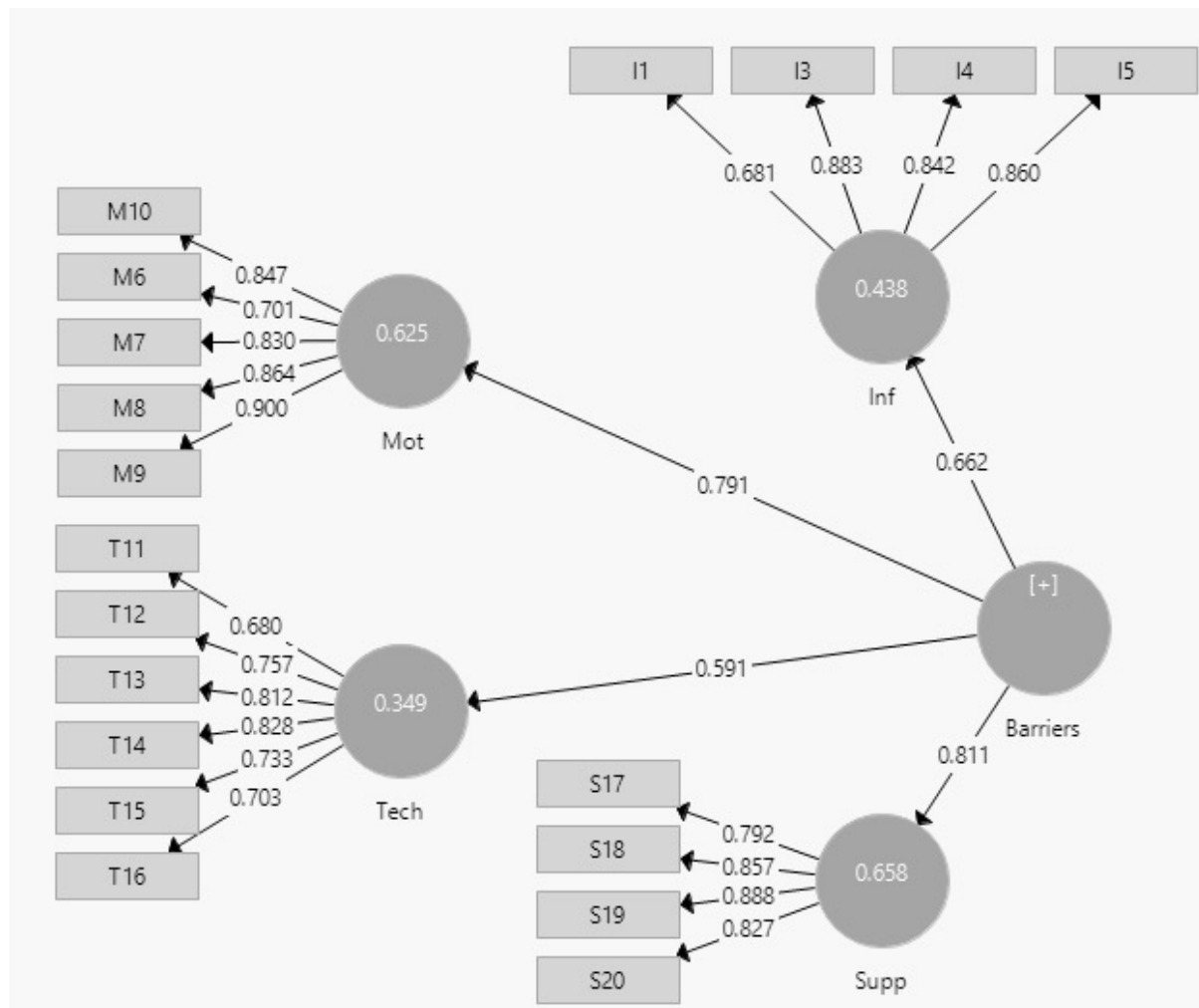


Figure 1. Structural Equation Model of Barriers to Participation in Online Tutorial

PLS-SEM does not have an established goodness-of-fit measure (Sarstedt & Ringle, 2017). The validity of the measurement can be seen from discriminant validity, namely the value of the average variance extracted (AVE) of each item in the questionnaire. Validity requirements are met by the AVE value of each item questionnaire greater than 0.50 which indicates convergent validity and a higher AVE value towards the latent variable intended compared to other latent variables showing discriminant validity (Fornell & Larcker, 1981). Table 2 shows that all items in the questionnaire or observed variable have an AVE value > 0.50 for the latent variable that is intended. Also, the AVE value for each observed variable has the highest value on the latent variable that is intended. Thus, measurements on the model studied show convergent validity and discriminant validity.

Table 2. Discriminant Validity

Items	Information	Motivation	Support Services	Technical Barriers
I1	<b>0.732</b>	0.159	0.419	0.003
I2	<b>0.786</b>	0.145	0.429	0.121
I3	<b>0.861</b>	0.237	0.418	0.104
I4	0.818	0.331	0.391	0.128
I5	0.827	0.365	0.402	0.069
M6	0.425	<b>0.700</b>	0.309	0.112
M7	0.217	<b>0.824</b>	0.316	0.197
M8	0.183	<b>0.876</b>	0.406	0.264
M9	0.279	<b>0.904</b>	0.424	0.299
M10	0.241	<b>0.851</b>	0.478	0.237
T11	0.014	0.122	0.025	<b>0.664</b>
T12	0.014	0.122	0.025	<b>0.664</b>
T13	0.026	0.298	0.202	<b>0.794</b>
T14	-0.011	0.182	0.168	<b>0.803</b>
T15	0.202	0.171	0.387	<b>0.739</b>
T16	0.441	0.188	0.143	<b>0.550</b>
S17	0.381	0.419	<b>0.797</b>	0.355
S18	0.523	0.378	<b>0.854</b>	0.180
S19	0.396	0.425	<b>0.884</b>	0.277
S20	0.405	0.348	<b>0.825</b>	0.228

The reliability of the measurement for each variable is listed in Table 3. From Table 3 it appears that for each measurement variable the Cronbach alpha value is greater than 0.80. Thus, measurements for each latent variable indicate adequate reliability (Sarstedt & Ringle, 2017).

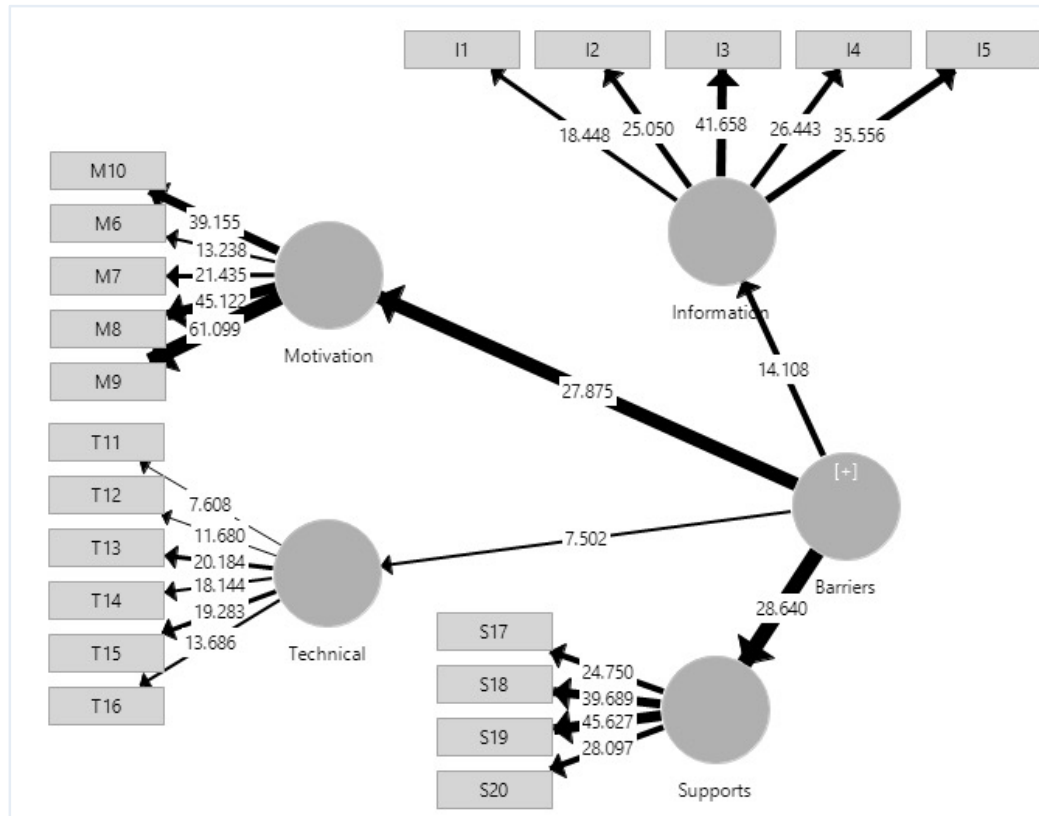
Tabel 4. Reliability

Variable	Alpha Cronbach	T-Value	P-Value
Information	0.865	51.868	0.000
Motivation	0.888	54.463	0.000
Supports	0.861	48.241	0.000
Technical	0.840	44.319	0.000

### *c. Factors Reflecting Barriers to Participation to Online Tutorial*

In the previous discussion, it was concluded that the following factors are the inhibiting factors for students to take online tutorials. These factors are; (1) lack of information received by students regarding online tutorials, (2) motivation of students to take online tutorials, (3) technical barriers faced by students when they will start and during online tutorials, and (4) lack of assistance

services felt by students. To see the effect of each factor on student barriers in taking online tutorials, path analysis was carried out, as shown in Figure 2.



**Figure 2.** Path Analysis of Students' Barriers to Participation to Online Tutorial

The number connected to the arrow line indicates the significance of the correlation coefficient (t-values) to represent the strength of the relationship between two variables, in this case, the strength of an observed variable reflects latent variable or the strength of the latent variable reflects other latent variables. For example, Figure 2 showed that the latent variable of the *Support* (availability support service for using online tutorial) was indicated by 28.640 of t-value which was the most strength variable to reflect the latent variable of the *Barriers to Participation in Online Tutorial*, and the observed variable of *s19* was the most strength item in the questionnaire in reflecting the *Support* variable with t-value = 45,627. As could be seen in Table 2, the *s19* item is a statement that expressed the students need an opportunity to practice the online tutorial. The next statement which was the second most strength to reflect the barrier to participation in the online tutorial was *s18* with t-value = 39.689. The item of *s18* is a statement that expressed the students need written guidance to join and carry out the online tutorial (see Table 2). UT did provide such written guidance. The problem was how the students could have and grasp the document.



The second best in reflecting barriers to participation to an online tutorial, as could be seen in Figure 2, was the motivation variable, with T-value = 27.875. Motivational variables are internal barriers for students to take online tutorials. Motivation is influenced by perceptions of the value of participation in online tutorials and the ease of following it. So, the barriers that come from motivation can be tangible in the form of perceptions of lack of benefits from participation in online tutorial or perceptions of natural difficulties following online tutorials. The questionnaire items that most strongly show motivational barriers are points M8 and M9 which state that students do not see the benefits of online tutorials.

Table 2. Statistics of Items and Some Statements in the Questionnaire

<b>Codes</b>	<b>Statements</b>	<b>Mean</b>	<b>Std. Dev</b>	<b>T-Statistic</b>	<b>P-Value</b>
<i>Information</i>					
I1	...	0.729	0.040	18.448	0.000
I2	...	0.784	0.031	25.050	0.000
I3	I don't know the schedule of the online tutorial	0.860	0.021	41.658	0.000
I4	...	0.818	0.031	26.443	0.000
I5	I don't know what devices needed for an online tutorial	0.825	0.023	35.556	0.000
<i>Motivation</i>					
M6	...	0.698	0.053	13.238	0.000
M7	...	0.823	0.038	21.435	0.000
M8	I think there is no benefit for joining the online tutorial	0.875	0.019	45.122	0.000
M9	Probably, joining an online tutorial will just waste my limited time	0.904	0.015	61.099	0.000
M10	...	0.851	0.022	39.155	0.000
<i>Technical Difficulties</i>					
T11	...	0.654	0.087	7.608	0.000
T12	...	0.747	0.065	11.680	0.000
T13	I have difficulties in reading through a computer screen	0.791	0.039	20.184	0.000
T14	...	0.797	0.044	18.144	0.000
T15	I don't have devices for a tutorial online	0.745	0.038	19.283	0.000
T16	...	0.703	0.051	13.686	0.000
<i>Support Services</i>					
S17	...	0.796	0.032	24.750	0.000
S18	I need a written guidance	0.853	0.022	39.689	0.000
S19	I need an opportunity to practice	0.884	0.019	45.627	0.000
S20	...	0.824	0.029	28.097	0.000

The third variable that reflects the barriers in following online tutorials is the variable lack of information about the online tutorial with the t-value = 14.108. This obstacle applies to students wanting learning assistance in the form of online tutorials, but they do not find an explanation for how to follow it. The questionnaire item that most reflects this variable is the point I3 (t-value = 41.658) and I5 (t-value = 35.556) which states that students do not know the schedule and equipment needed to take online tutorials.

The fourth variable, as the least reflection of the barriers, was a technical variable. The variable of technical barriers was associated with some students who had difficulty in operating the online tutorial. The questionnaire that best describes this variable is item T13 (t-value = 20.184) which states that students experience difficulties because of physical barriers, namely the eye, in reading a text through a computer. Another questionnaire item that reflects the technical resistance variable is item T15 (t-value = 19.283) which states that there is no equipment that students have for online tutorials. Technical barriers are very likely related to age and access to the internet. In this study, technical barriers are the smallest obstacle. Therefore, it can be concluded that most students do not have technical obstacles.

## **Conclusions and Recommendations**

Identification of factors of students' barriers to participating in the online tutorial using mixed method revealed four factors of the barriers. The four factors are (1) perception of the students that they don't have adequate supports services for joining tutorial online, (2) low of students' motivation to participate in the online tutorial, (3) insufficient information about online tutorial, and (4) technical constraint faced by some students.

To increase the number of students using online tutorial in the future, UT and similar open and distance university with large number of heterogeneous students spread out in remote areas, should (1) provide student support services specialized for tutorial online in every regional office centers, (2) inform the students to the benefits and easiness of tutorial online to their learning, (3) provide and distribute a written guidance of online tutorial, and (4) offer online practice for students whenever they need.

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