



# Measurement Scale of Student Readiness in Following Hybrid Learning: Validity and Reliability

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**Abstract.** Research during the pandemic shows that there are many negative impacts during the implementation of online learning, the implementation of hybrid learning is expected to be a solution to solve these problems. The purpose of this study was to test the scale of measurement of student readiness in participating in hybrid-based learning. The research instrument that was tested for validity and reliability consisted of 15 statement items, with 38 research respondents. Based on the results of the validity and reliability analysis carried out, it is known that the instrument developed based on the indicators of understanding the implementation of hybrid learning, implementation of health protocol, students perception, parents support, and student readiness, was declared valid and reliable.

**Keywords:** Student Readiness · Hybrid Learning · Validity · Reliability

## 1 Introduction

Announcement Number 31.1.57/UN32.I/KM/2022 regarding the implementation of lectures in the Even Semester 2021/2022, which was signed by the Vice Rector 1 of the Universitas Negeri Malang (UM), shows the attitude of the UM leadership in organizing learning activities during the pandemic period. The essence of it is that lectures are carried out in a hybrid manner, provided that 50% of students are in class, and the rest take lessons from home, while still paying attention to the development of the pandemic in the campus area. Learning is based on a hybrid system, based on the implementation of learning that is carried out offline and online simultaneously, where there are students who study from home or their respective places and there are those who study in class (face to face) [1, 2].

Research during the pandemic shows that there are not a few negative impacts during the implementation of online learning, including internet access that is often disrupted, the boredom felt by students, because there is no socio-emotional bond between lecturers and students, and the most worrying thing is the occurrence of learning loss [3–5]. One of the solutions to overcome these problems is to hold lectures with a hybrid system [6, 7]. Hybrid lectures can be considered as a new habit for students, which requires readiness and adaptation skills in undergoing daily learning [8, 9]. It should be emphasized to students to have a strong mentality, mentally not to worry easily or panic in a situation, mentally to be ready to always behave to protect and protect themselves, both fellow students or students with other civitas [1, 10, 11].

Universities as organizers of learning activities require extra readiness to provide excellent educational services to all students, not only readiness in implementing health protocol facilities but also preparing ICT devices to support classroom activities. The community and students as service recipients are said to not have a complete attitude related to hybrid learning [12–14]. This is because there are still ups and downs of daily cases of Covid 19. Universities also need to pay attention to the provisions in implementing the hybrid system, including obtaining permission from parents, having received at least 2 doses of vaccination, self-quarantine for a certain time or swab test to detect the Covid 19 virus, and of course participate in lecture activities in a healthy condition [15, 16].

Communities and universities can have the opportunity to synergize in the implementation of learning with a hybrid system, of course the implementation of hybrid learning needs to pay attention to student readiness [9, 17, 18], and an instrument is needed to measure student readiness in attending lectures with hybrid system. The instrument used must also be valid and reliable in order to obtain data according to needs. Based on this explanation, it can be explained that the purpose of this study is to test the scale of measuring students' readiness in participating in hybrid-based learning.

## 2 Methods

This study aims to test the scale of measuring student readiness in participating in hybrid-based learning. The research instrument consisted of 15 statement items, which were developed based on indicators as shown in Table 1. The research instrument used a closed questionnaire with four alternative answers, ranging from 1 (never)–4 (always). Respondents in this study were 38 students from the Department of Educational Administration, State University of Malang. To achieve the research objectives, two analytical techniques were used, namely product moment pearson's to test the validity of the instrument items, and cronbach's alpha to test the reliability of the instrument with the help of the SPSS 24.0 program [19, 20].

**Table 1.** Description of research variables

Variable	Indicator	Item Code
Student Readiness to Participate in Hybrid Learning	1. Understanding	X1, and X2
	2. Implementation of health protocol	X3, X4, X5, X6 and X7
	3. Student perception	X8, X9, and X10
	4. Parents support	X11, X12, and X13
	5. Student readiness	X14 and X15

**Table 2.** Description of the respondent's health condition

Statement	Freq	%
I have tested positive for Covid-19		
Yes	7	18.42%
Not yet	31	81.58%
I have a comorbid illness		
Yes	1	2.63%
Not yet	37	97.37%
I have got the Covid-19 Vaccination		
Not yet	0	0.00%
Yes, dose 1	2	5.26%
Yes, dose 2	14	36.84%
Yes, dose 3 (booster)	22	57.90%

### 3 Results and Discussion

Before testing the validity and reliability of the research instrument, it is deemed necessary to explain the description of the respondent's health, because the readiness of students to take hybrid lectures also depends on the health condition of the respondent. Based on Table 2, there are 7 respondents who have been exposed to Covid 19, and the remaining 31 students have never been exposed to Covid 19. Furthermore, there is only one respondent who has a comorbid disease, and the rest do not have a comorbid disease. 22 students have received vaccine dose 3 (booster), 14 students have received vaccine dose 2, and 2 students have received vaccine dose 1. The characteristics of these respondents are important in interpreting the results of this study, that the respondents' health condition is relatively good, where the majority have received the vaccine dose 2 and dose 3, and only one student had a comorbid disease.

The results of the validity and reliability test of the instrument are shown in Table 3. It can be seen that based on the validity analysis using Pearson's product moment,

the instrument to measure student readiness in attending lectures with a hybrid system, with 15 statement items, all statement items are declared valid, because in each items obtained sign value  $< 0.05$ .

The next stage is a reliability test using Cronbach's alpha with the help of SPSS 24.0. Based on Table 3, it can be seen that the value of  $\alpha = 0.877$ , based on this value the research instrument can be declared reliable. Referring to the results of the analysis, the instrument to measure student readiness in attending lectures with a hybrid system can be used by researchers as well as other researchers.

As a basis for discussing the results of this study, we can start from the description of the characteristics of the respondent's health condition, where the health condition of the respondents is relatively good, because most of them have participated in the vaccination program up to the 3rd dose (booster) and only 1 respondent has a comorbid disease. Various research results state that the implementation of learning with a hybrid system must pay attention to the health conditions of students [7, 21, 22]. This certainly needs to be a concern so that the existing virus does not spread. The good health condition of students seen from having participated in the vaccination program, not having comorbid diseases, and having done a swab test, is one of the success factors in implementing hybrid learning [11, 23, 24].

Based on the results of the validity and reliability analysis carried out, it is known that the instruments developed based on the indicators of understanding the implementation of hybrid learning, implementation of health protocols, students perception, parents support, and student readiness, were declared valid and reliable. The first indicator is the understanding of the implementation of learning with a hybrid system, technical implementation and rules in learning with a hybrid system, this is important so that the goals that have been set can be achieved and not even backfire [25, 26]. Universities are obliged to socialize these rules, so that students get complete and accurate information related to the technical lectures carried out [7, 10].

The second indicator is the application of health protocols, no doubt the main factor to ensure the success of learning during the pandemic is discipline in implementing the covid 19 health protocol. Universities need to supervise all their citizens regarding the implementation of strict health protocols [27, 28]. The next indicator is the student's perception of hybrid learning, strong mental formation of students requires a positive student perception of the implementation of hybrid learning. For example, students believe that the campus has prepared adequate facilities to hold lectures with a hybrid system. These beliefs will shape students' perceptions related to their readiness to participate in hybrid learning [29, 30].

An indicator that is no less important is family support, the absence of parental support for students, of course, affects the readiness of students to participate in learning with a hybrid system [15, 31]. Parental support is not only in the form of financial, but also in the form of non-financial in the form of providing motivation, encouragement, and guidance [32, 33]. The last indicator is student readiness, student readiness is determined by the commitment of students, not only commitment to following the lesson well, but also commitment from students to implement the provisions that have been prepared by the university [34, 35].

**Table 3.** Validity and reliability test results

Item Code	Statement	Pearson Correlation	Sig.	Decision	$\alpha$	Decision
Student Readiness to Participate in Hybrid Learning					0.877	Reliable
X1	I understand the technical implementation of lectures with a hybrid system on campus	0.649	0.000	Valid		
X2	My campus provides clear information related to the technical implementation of lectures with a hybrid system	0.430	0.007	Valid		
X3	I always wear a mask when I'm outside	0.495	0.002	Valid		
X4	I regularly wash my hands using running water and soap during the pandemic	0.573	0.000	Valid		
X5	I always keep my distance when I'm outside the house	0.527	0.001	Valid		
X6	I always stay away from the crowd when I'm outside the house	0.478	0.002	Valid		
X7	I'm trying to reduce mobility during the pandemic	0.482	0.002	Valid		
X8	I believe the hybrid lectures that are carried out are important and can help in mastering the lecture material	0.733	0.000	Valid		
X9	I am sure that the hybrid lectures carried out will continue to strictly implement the Covid 19 health protocols	0.668	0.000	Valid		

*(continued)*

**Table 3.** (continued)

Item Code	Statement	Pearson Correlation	Sig.	Decision	$\alpha$	Decision
X10	I believe the campus has provided adequate facilities and infrastructure to support hybrid lectures	0.686	0.000	Valid		
X11	My parents agree if I take classes using a hybrid system on campus	0.777	0.000	Valid		
X12	My parents are willing to provide financial support if I attend lectures using a hybrid system on campus	0.700	0.000	Valid		
X13	My parents are willing to provide non-financial support if I attend lectures using a hybrid system on campus	0.773	0.000	Valid		
X14	I have a commitment to attend lectures using the hybrid system on campus as well as possible	0.636	0.000	Valid		
X15	I am ready to take classes using a hybrid system on campus	0.704	0.000	Valid		

## 4 Conclusion

The implementation of hybrid learning needs to pay attention to student readiness, and an instrument is needed, to measure student readiness in attending lectures with a hybrid system. The instrument used must also be valid and reliable in order to obtain data according to needs. Based on the results of the validity and reliability analysis carried out, it is known that the instrument developed based on indicators of understanding the implementation of hybrid learning, implementation of health protocol, students perception, parents support, and student readiness, was declared valid and reliable. The results of the instrument testing carried out indicate that the research instrument can be used by researchers and other researchers. One of the limitations of this study is that it does not test the constructs that build a model to develop a scale, further researchers can perform these tests using other software such as SEM AMOS.

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