Analysis of the Effect of Blended Learning Method on New Students of PTP UNM

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A R T I C L E I N F O	A B S T R A C T
  	This study aims to determine the effect of blended learning method on new students of technology education UNM. This research is a quantitative study that refers to a research methodology based on the concept of positivism and is carried out by selecting certain samples and populations. The sample of this study were new students with the number of subjects in this study were 36 people. The data collection technique used in the study used a questionnaire distributed via google form which included 20 statements. Based on the results of data analysis, it can be concluded that new students feel that learning using blended learning has effectiveness and flexibility in its implementation, but has disadvantages in face-to-face and online methods respectively. The disadvantages of online learning include students not being able to adapt to the campus environment, inadequate internet networks, students cannot understand the material properly and monotonous online learning makes students pay less attention to it and even tend to find it boring with such long learning hours while offline learning is considered to be able to cover class conditions that are not in accordance with its capacity, can interact with friends and lecturers, and learning hours are more scheduled.

INTRODUCTION

Higher education has undergone a significant transformation, especially in terms of learning methods (Khairunnisa, 2022). One of the new and exciting innovations is an approach that combines online and traditional face-to-face learning. In the growing digital era and information technology, this method has become an attractive alternative to meet the increasingly diverse and dynamic needs of education (Dewi et al., 2019). The main goal of higher education is to improve students' academic ability. Under these circumstances, the implementation of a blended learning approach can greatly affect the ability of freshmen.

To combine the advantages of online and face-to-face learning, blended learning can be used. On the one hand, online learning allows students to access course materials and resources online, providing time and place flexibility (Setiawardhani, 2013). On the other hand, face-to-face learning allows students to interact directly with teachers and fellow students, resulting in a more cooperative learning environment. Therefore, it is expected that the use of blended learning approach will improve students' abilities. However, keep in mind that each student has different learning preferences and the way they use technology when using the blended learning approach (Sani, 2022). The extent to which this method affects the development of new students' abilities can be influenced by these factors. The role of lecturers in designing and delivering learning is also affected by the success of this method.

Although the COVID-19 pandemic has ended, the university-level learning process still uses a blended learning system (Diana, n.d.). As the outbreak forces new students to study from home, they will definitely have a hard time understanding the lessons. If you continue to receive materials online, it will definitely make you bored and saturated, not to mention the frequent problems that arise while studying (Jetissa & Hasan, 2021). Students can experience physical and mental fatigue due to continuous online studying. They can also feel overly pressured by the amount of material they have to learn, which can cause them to put off work, which in turn can interfere with their academic achievement.

Students face many problems when studying online. These include difficult-to-understand material and unsupportive network issues. Poor comprehension and retention of material can occur due to continuous learning without adequate breaks. Students only remember information without understanding it, and sometimes other students do not do group work because they depend on their friends. New students who have to adapt to the campus environment and their new friends have to learn online again, creating a social gap. Thorough research on the impact of blended learning on new student abilities is essential due to the complexity and relevance of this issue. The results of this research are expected to enhance our understanding of the role of technology in education and how we can use it to improve higher education. In addition, this research will help colleges and higher education institutions create curricula and learning strategies that are more effective and responsive to the needs of society and students.

LITERATURE REVIEW

Innovative and effective learning alternatives have been carried out so that these problems can be resolved such as previous research on individualized and cooperative learning methods in the application of blended learning models by (Ramli et al., 2020) with this method can make it easier for students to understand the material with material that can be played back if they still don't understand. The use of this learning model can help students solve problems together that have been given and increase student involvement in learning, enrich their understanding of the topics studied, help students develop social skills and cooperation that are important in everyday life for the future. Further research by (Isma Andika et al., 2023) on the effect of the blended learning model on student cognitive development that in the implementation of learning there are obstacles such as internet network barriers and less conducive classroom conditions and the use of blended learning methods is less suitable for practicum courses because it can reduce interaction with lecturers. Further research by (Fadhilatunisa et al., 2020) on the effect of blended learning on learning activities and learning outcomes of accounting students in its application, namely that there are still several dependent variables that can be used as a measure of the success of this learning model and the lack of feedback from students who are still passive so that lecturers need to stimulate students to be active in online learning and the lack of honesty in assignments collected by students who have almost the same level of similarity.

METHODOLOGY

This research is a type of quantitative research because the methodology is based on positivism and is carried out by selecting samples and special populations (Ramdhan, 2021). This research uses an analytic survey approach, which involves research instruments and samples, to obtain data. To evaluate the blended learning method on the development of new PTP UNM students, data was collected from quantitative data or numbers that will be processed through statistical analysis and described descriptively.

Compared to other data collection methods, (Makbul, 2021) the questionnaire technique in this study provides more explanations in a faster time and lower cost. The purpose of using this method is to determine the effect of blended learning methods on new PTP UNM students. A questionnaire consisting of five choices with 20 questions will be distributed to respondents via Google Form. To measure the variables, this research uses Likert scale. In addition, quantitative data will be collected and respondents will be given points for each of the five selected answers to make the measurement easier.

RESULT AND DISSCUSION

This research uses descriptive method with the aim to understand how cognitive growth occurs when learning is done using blended learning approach in first year students studying technical skills at UNM. By using questionnaire data collection method using Google Form, the researcher collected respondents' data about the given statements. There are twenty statements in the questionnaire that will be answered by respondents by determining the relative importance of each statement. There are five points in the approval range, ranging from strongly agree to strongly disagree. The subjects of this study were first-year students in the UNM agricultural engineering department totaling 36 people. The data was assessed quantitatively using a Likert scale with the aim of providing a score in the form of a scale on each statement in the questionnaire. The Likert scale levels used are as follows:

Table 1. Rating Weight Using Likert Scale

Alternative Answers	Abbreviated Answer Alternatives	Statement Value Score
Strongly Agree	SA	5
Agree	A	4
Hesitate	H	3
Disagree	D	2
Disagree Strongly	DS	1

After the average value of the answers is known, then the results are interpreted based on table 1 then the researcher makes a continun line:

$$Interval\ level\ value = \frac{Nilai\ Max - Nilai\ Min}{number\ of\ statement\ criteria}$$

.... (1)

$$scale\ width = \frac{5-1}{5} = 0,8$$

Table 2. Interval Likert Scale

Keterangan	Scale	
Strongly Agree	3,7	4,5
Agree	2,8	3,6
Hesitate	1,90	2,7
Disagree	1,09	1,89
Disagree Strongly	1, 00	1,08

The following is a continuum line used to make it easier for researchers to see the research categories regarding the variables studied

Table 3. Continuum line

Very Bad	No good	Medium	Good	Very Good

1,00   1,08   1,89   2,7   3,6   4,5

The results of research through a scale of statements regarding the development of new student abilities when learning is carried out using the blended learning method for new ptp unm students consisting of 20 statements responded to by respondents. The recap results will be displayed through tables that represent all statements responded to by respondents shown in the following.

Table 3. Recap of Questionnaire Statement 1

Online learning is more effective than offline learning							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
2	13	12	7	2	102	2,83	Good

Based on statement 1, it can be concluded that online learning is better used than offline learning by new students of Agricultural Engineering Education UNM.

Table 4. Recap of Questionnaire Statement 2

Do you find it difficult to understand the material presented during online learning							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
0	0	3	28	5	146	4,06	Very Good

Based on statement 2, it can be concluded that learning is carried out online, new students do not understand the material presented.

Table 5. Recap of Questionnaire Statement 3

Methods used during the online learning process, easier to understand							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
2	9	14	10	1	107	2,97	Good

Based on statement 3, it can be concluded that during the online learning process the material can be well received by new students of Agricultural Engineering Education UNM.

Table 6. Recap of Questionnaire Statement 4

Students prefer online learning, rather than offline learning							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
4	10	13	6	3	102	2,83	Good

Based on statement 4, it can be concluded that new students of agricultural technology education UNM can receive learning both offline and online.

Table 7. Recap of Questionnaire Statement 5

Students are quick to understand the material from lecturers who teach during online learning.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
4	8	18	4	2	100	2,78	Medium

Based on statement 5, it can be concluded that new students are less able to understand the material from lecturers who teach during online learning.

Table 8. Recap of Questionnaire Statement 6

Students have difficulty understanding some of the material presented because they are often constrained by the signal.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
0	0	0	19	17	161	4,47	Very Good

Based on statement 6, it can be concluded that new students really experience internet network problems when online learning is carried out due to several factors.

Table 9. Recap of Questionnaire Statement 7

Students are more active during online learning when question and answer / discussion sessions are given							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
1	3	12	15	5	128	3,56	Good

Based on statement 7, it can be concluded that new students are more active in discussion sessions during online learning.

Table 10. Recap of Questionnaire Statement 8

The material presented will be easier to understand if the learning is done offline (Face to Face)							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
0	0	2	19	15	157	4,36	Very Good

Based on statement 8, it can be concluded that new students of agricultural technology education UNM prefer the material presented to be easier if learning is done offline (face-to-face).

Table 11. Recap of Questionnaire Statement 9

Online learning is more tiring than offline learning							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
1	4	15	13	3	121	3,36	Good

Based on statement 9, it can be concluded that new students feel more tired if online learning is carried out than offline.

Table 12. Recap of Questionnaire Statement 10

Students prefer direct interaction between lecturers and students rather than having to be done remotely (online)							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
0	0	4	25	7	147	4,08	Very Good

Based on statement 10, it can be concluded that new students of agricultural technology education UNM prefer online learning if there is interaction between lecturers and students.

Table 13. Recap of Questionnaire Statement 11

Students dislike online learning because they cannot interact directly with classmates, so some of them have difficulty finding friends.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
0	1	3	25	7	146	4,06	Very Good

Based on statement 11, it can be concluded that new students of agricultural technology education UNM dislike online learning because they

cannot interact directly with classmates so that the process of adapting to the campus environment cannot be felt.

Table 14. Recap of Questionnaire Statement 12

Some of the material delivered by some lecturers was not well understood due to signal constraints and the place used was not supportive during the learning process.							
Total responses					Sum	Mean	Conclusin
1	2	3	4	5			
1	0	4	22	9	146	4,06	Good

Based on statement 12, it can be concluded that new students of agricultural technology education UNM feel that some of the material delivered by some lecturers is not understood because it is constrained by the signal and the place used is not supportive during the learning process.

Table 15. Recap of Questionnaire Statement 13

Students prefer learning to be done offline in one class, because their focus on learning is not distracted by other things.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
1	0	2	20	13	152	4,22	Very Good

Based on statement 13, it can be concluded that new students of agricultural technology education prefer learning to be done offline in one class, because their focus on learning is not distracted by other things.

Table 16. Recap of Questionnaire Statement 14

Students prefer online learning, because it is easier when doing some other activities (vacation / other things)							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
4	10	7	12	3	108	3,00	Good

Based on statement 14, it can be concluded that new students of agricultural technology education UNM tend to like online learning because it makes it easier to carry out various other activities.

Table 17. Recap of Questionnaire Statement 15

Students prefer online learning, in addition to being effective, it is also easy to access the material because of the supporting signal.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
4	8	13	10	1	104	2,89	Good

Based on statement 15, it can be concluded that new students of agricultural technology education UNM can well take part in online learning,

besides being effective, it is also easy to access material because of the supporting signal.

Table 18. Recap of Questionnaire Statement 16

Students prefer interactive video material over written material							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
2	5	10	15	4	122	3,39	Very Good

Based on statement 16, it can be concluded that new students of agricultural technology education UNM prefer interactive videos compared to written material.

Table 19. Recap of Questionnaire Statement 17

Students like the online learning process because it is relatively relaxed, because during the learning process students can listen to the material while continuing their sleep.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
6	7	9	12	4	115	3,19	Good

Based on statement 17, it can be concluded that new students of unm agricultural technology education are good at carrying out online learning because they are classified as a little relaxed, because during the learning process students can listen to the material while continuing their sleep.

Table 20. Recap of Questionnaire Statement 18

Instead of doing the learning process offline, students prefer to go online because students can be a little lazy.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
5	10	10	9	2	101	2,81	Good

Based on statement 18, it can be concluded that students tend to be lazy because of online learning compared to face-to-face learning that meets directly with lecturers.

Table 21. Recap of Questionnaire Statement 19

Students prefer online learning because they don't like to interact, so online learning methods are very helpful.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
6	9	9	11	1	100	2,78	Medium

Based on statement 19, it can be concluded that new students of UNM agricultural technology education tend to dislike online learning because they don't like interacting, so online learning methods are very helpful.

Table 22. Recap of Questionnaire Statement 20

Students are more active in repeating/learning the material that has been given during the online learning process.							
Total responses					Sum	Mean	Conclusion
1	2	3	4	5			
2	2	16	15	1	119	3,31	Good

Based on statement 20, it can be concluded that new students of UNM agricultural technology education are more active in repeating/studying the material provided during the learning process carried out online because it is available online can be accessed at any time.

CONCLUSIONS AND DISCUSSION

The recapitulated statements from 36 respondents show that blended learning is easier because it is effective and flexible. To make up for the conditional shortcomings, blended learning can be used simultaneously with two methods, namely face-to-face and virtual. This makes it more flexible. Students can choose to follow online learning in cases where the internet network is inadequate. Conversely, in cases where the classroom environment is inconvenient or meeting is impossible, students can choose to take the learning offline. The researcher found that blended learning method is not suitable for practicum-based courses because it can reduce students' direct interaction with the instructor. Blended learning can help students follow lessons and increase their desire to participate in each activity. This can have an impact on students' cognitive development.

Blended learning certainly greatly affects the ability of students when learning, especially at the university level and a new environment in the adaptation process. Online learning that seems monotonous makes students feel bored quickly in the learning process, so educators must create a learning atmosphere that attracts students' attention so that they remain focused on following the learning until the end. The existence of an independent curriculum in making teaching staff is guided to be more creative in the classroom so that students are not impressed to only follow what their lecturers say but can make or get new things by themselves.

FURTHER RESEARCH

This research certainly has many shortcomings to find out how effective the effect of blended learning is on new students, therefore suggestions for further research add classification by comparing online and offline classes and comparing course grades as a result of blended learning to find out which method is most appropriate for the development of new students.

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