

The implementation of blended learning in the new normal era at vocational school of health

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ABSTRACT

This study aims to describe blended learning in the new normal era in vocational health schools. Vocational education contributes to preparing skilled workforce graduates. Therefore, vocational education must prepare the learning process based on the conditions and needs of students. The research method used was a qualitative approach. A case study was conducted to empirically investigate the phenomenon of the learning process in the new normal era through blended learning. This study collaborated with 96 fourth-semester and 92 sixth-semester students at the Medical Laboratory Technology Study Program in Associate Degree of Health Polytechnic Ministry of Health Manado. The study results showed that during Covid-19, students could not practice directly in the laboratory freely, so it took much work to apply the required course applications in the form of practice. Although out of 188 students, only 110 students often use smartphones in the blended learning process. Students experience the most serious difficulty in understanding and practicing laboratory quality control courses, with a percentage of 38.6%. Therefore, laboratory quality control is considered in terms of student responses to difficult subjects to understand during the online learning process. So that further research is needed to develop a learning system that can increase student learning motivation. Not only up to motivation but students also have to understand how to use technology well.



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INTRODUCTION

The global Covid-19 pandemic has caused changes in all sectors of life, including the higher education sector (Bhagat & Kim, 2020). This has led to a striking change in the learning system, where traditional face-to-face learning must suddenly turn into online/virtual learning called e-learning or online learning or distance learning (Lapitan et al., 2021; Tavitiyaman et al., 2021). This drastic change has caused the government to require implementing the learning system to be carried out online or virtually throughout the country without making any changes due to poor infrastructure and available networks (Oyediran et al., 2020). As a result, all those involved in the higher education environment face the challenge of quickly adapting to the new normal (Lapitan et al., 2021). Therefore, educational institutions are expected to provide the necessary technology to support students' and educators' online teaching and learning process (Code et al., 2020).

According to Jeon et al. (2017), the role of educators in vocational education must also change and keep up with technological developments so as not to fall behind. On the other hand, educators must have competencies, including designing learning, conducting teaching and learning

processes, evaluating learning materials and methods, conducting guidance and interpersonal relationships with students, and providing support and cooperation in the classroom and school. According to Delialioğlu (2012), designing and using various learning resources and a good learning system will improve learning and student development. However, based on the findings above, the lack of learning resources makes students unmotivated and decreases the learning system. Gleason (2018) explained that the institution must prepare for higher education to face the era of industrial revolution 4.0 with hybrid online and in-person instruction, seamless use of video conferencing, and more asynchronous learning resources. This is done to make it easier for students to adapt to the new normal era. Based on Bruri's (2017) research, educators facing the new normal era must act as a companion for students to find and create independent learning.

On the other side, Winanti et al. (2019) show that an innovative learning system is a must for education in facing learning in the new normal era. Educators need to use appropriate learning methods and media to meet educational needs, especially the millennial generation. So it is not enough just to master the substance of the material (Prahani et al., 2020). According to Mahmud et al. (2020), the development of education through the effectiveness of blended learning is strongly influenced by technological developments that continue to grow. The use of educational materials with improved technology and pedagogical learning processes, such as games, flip classrooms, a combination of flip classrooms, and Problem Based Learning (PBL), is needed according to the results of research that have been carried out in various educational institutions (Zhao et al., 2018).

Blended learning is useful in increasing access and helping to reduce student problems (Dziuban et al., 2018). Based on previous research shows that blended learning has a positive impact on the learning process. Therefore, the researchers analyzed how blended learning has been implemented in vocational health education in the new normal era for health polytechnic students. Blended learning combines pedagogical approaches to produce an optimal learning process as a combination of face-to-face learning with teaching activities mediated by technology (Elyakim et al., 2019). Wichadee (2017) explained that using technology with this new teaching methodology can create a much more innovative learning environment. It can enable educators to organize their teaching more efficiently. This concept can shift the role of traditional learning to be much more effective (Liu et al., 2016). In general, when compared to face-to-face learning, blended learning can result in increased learning success and satisfaction for students (Moskal et al., 2013). Besides that, blended learning combines instructions carried out remotely with online-based learning and in the classroom (Poncela, 2013). According to de Jong et al. (2017), design in blended learning is one of the short-term forces driving technology adoption in higher education in the next 1-2 years.

At the higher education level, vocational education contributes to preparing skilled workforce graduates. Therefore, vocational education must prepare the learning process based on the conditions and needs of students, especially in the middle of the new normal (Verawadina et al., 2019). The weakness in traditional learning is the unpreparedness of educators and students in the learning process. This can have an impact on the quality of student learning. So that blended learning model variables are needed to help improve student learning outcomes (Pratama & Dermawan, 2020). Hartanto et al. (2019) explained that the challenge of vocational education is the quality of learning and the need for quality educators. Maulana and Iswari's (2020) research shows that online learning in vocational education has a stressful impact on students. Therefore, blended learning needs to consider the characteristics of digital technology, in general, and information communication technology (ICT), more specifically (Mahmud et al., 2020).

Technology provides an opportunity for educators to improve the quality of learning, one of which is through a blended learning model. The positive effect of blended learning using technology is the advantage of the new learning system in teaching and motivating students, which impacts learning outcomes (Bocconi & Trentin, 2014). Information communication through ICT automatically in this blended learning system can be designed by humans (Dziuban et al., 2018). In addition, adjustment of learning facilities and infrastructure and the availability of learning resources in information technology, internet, big data analysis, and computerization are needed. Gustafson and Branch (1991) explained that the learning development model has different characteristics. At the same time, it can be generalized that all types of learning development consist of analysis, design, development, implementation, and evaluation. So to identify the application of blended learning

requires a deeper understanding of the model because technology provides an important role to be implemented in the new normal era.

RESEARCH METHOD

This study uses a qualitative approach to analyze blended learning for students in the new normal era of vocational health education. According to Palmer and Bolderston (2006), qualitative research is an interpretive approach that tries to gain insight into the meaning and behavior of applying the learning media used. Therefore, we use case studies as a qualitative research method. Yin (2009) argued that the case study is an empirical investigation of the phenomenon of the learning process in the new normal era through blended learning. This research collaborates with the Medical Laboratory Technology Study Program in Associate Degree of Health Polytechnic Ministry of Health Manado.

In determining the research subject, the researcher used the purposive sampling technique. According to Patton (in Braun & Clarke, 2019), purposive sampling is a technique that is widely used in qualitative research. This is to identify and select individuals who have a blended learning-based learning experience and are currently studying at the Medical Laboratory Technology Study Program in Associate Degree of Health Polytechnic Ministry of Health Manado on fourth-semester and sixth-semester (Creswell, 2014). Researchers chose fourth-semester students because they had not followed many practical courses. Meanwhile, sixth-semester students have attended many practical courses. Based on these criteria, the participants of this study amounted to 96 students (fourth semester) and 92 students (sixth-semester). On the other side, to maintain the research code of ethics, participants' names were withheld.

In analyzing the process of analyzing the extent to which blended learning has been implemented in vocational health education in the new normal era, the researchers distributed questionnaires to 188 students of the Medical Laboratory Technology Study Program in Associate Degree of Health Polytechnic Ministry of Health Manado. The following is a questionnaire instrument distributed to students (see Table 1). After distributing the questionnaire, we used interviews to analyze more deeply related to blended learning. Therefore, according to Winanti et al. (2019), there are question components, namely as follows: 1.) The learning system before the Covid-19 pandemic; 2.) Facilities provided by the campus for the learning process; 3.) Obstacles to the learning process during the Covid-19 pandemic; 4.) Learning materials and resources obtained; 5.) The type and learning media used; and 6.) Utilization of hybrid learning.

In the data collection process, the researchers collected data from the distribution of questionnaires conducted using the google form in collaboration with one of the related lecturers from March to April 2021. The questionnaires used were related to the use of technology and student learning independence through blended learning in the new era normal concept based on Dwiyogo (2018). Data collection through questionnaires is carried out to increase the possibility of obtaining accurate information (Palmer & Bolderston, 2006). Of the 14 questionnaires, only 13 questionnaires were declared valid because the r count was more than the r table. However, one questionnaire was declared negative because the results were less than the number of r tables, namely 0.1677.

At the same time, the results of the reliability test on blended learning are $0.870 > 0.60$. Before filling out the questionnaire, the researcher first held a meeting with students via zoom to explain the purpose of the research. This study uses structured interviews, wherein structured interviews; the researcher asks a series of predetermined questions using the same words and sequence of questions as specified in the interview sequence. Therefore, the researchers conducted interviews with ten students. These students were selected based on the results of significant questionnaire answers, namely five students who got the highest score and five students who had the lowest score so that they needed to be interviewed to deepen the analysis related to the application of blended learning that had been done. Interviews were conducted from April to May 2021. Due to the ongoing Covid pandemic, researchers conducted interviews with students via Zoom. The duration of the interview conducted by the researcher was 45 minutes.

The data analysis in this study used the steps developed by Creswell (2014) to organize data into several forms based on databases and sentences. Then during the research process, the researcher

must make notes, short notes, or summaries of important points to enable categories. In addition, identify the category according to its classification. Besides that, it integrates and summarizes the data presented through descriptive data, tables, and matrix diagrams. Furthermore, the results of the data are interpreted using a rating scale, as can be seen in [Table 2](#). The percentage range in this study can be seen in [Table 3](#).

Table 1. Questionnaire Instrument

No.	Aspect	Indicator	Number
1	Technology Utilization	<ul style="list-style-type: none"> • Internet access • Access social media • Learning Resources 	1,2,3,4,5,6
2	Distance Learning Process	<ul style="list-style-type: none"> • Internet-based learning system • Motivation to learn 	7,8,9,10
3	Provision of Facilities	<ul style="list-style-type: none"> • Learning facilities used 	11
4	Practical Learning in the time of Covid	<ul style="list-style-type: none"> • Hybrid-based learning system 	12,13

Table 2. Scoring Terms

Criteria	Score
Never	1
Rarely	2
Sometimes	3
Often	4
Very Often	5

Table 3. Percentage Range

No.	Percentage (%)	Criteria
1	81-100	Very Often
2	61-80	Often
3	41-60	Sometimes
4	21-40	Rarely
5	≤ 20	Never

The score in [Table 2](#) shows the criteria for using technology in the learning process, accessing the internet, social media, and learning resources. Based on [Table 2](#), the questionnaire results have been analyzed by calculating the percentage of values obtained by the formula, as can be seen in Formula 1.

$$P = \frac{\text{total score obtained}}{\text{total score criteria skor}} \times 100\% \tag{1}$$

Notes:

P = Percentage

Criterion score = highest score for each item x number of items x number of respondents

RESULT AND DISCUSSION

Result

Based on the results of the research conducted, the researchers distributed 188 questionnaires to the respondents. From 188 questionnaires, only 158 respondents could be processed. Descriptions of the respondents can be seen in [Table 4](#). [Table 4](#) shows that Medical Laboratory Technology Study Program in Associate Degree of Health Polytechnic Ministry of Health Manado students understand hybrid learning. In [Table 5](#), frequently used devices by students in the learning process also show

that 69.6% (110) use smartphones. In line with Kadry and Ghazal (2019), using smartphones in education can improve students learning.

Table 4. The Understanding of Hybrid Learning by Respondents

	Total	Percentage (%)
Understanding of <i>Hybrid Learning</i>		
Yes	151	95.5
No	7	4.5

Table 5. Frequently used Devices by Respondents

	Total	Percentage (%)
Frequently used devices		
Computer/Laptop	48	30.4
Smartphone	110	69.6

Table 6 shows that students experience the highest difficulty in understanding and practicing laboratory quality control courses with a percentage of 38.6%. Therefore, students have problems related to subjects that are difficult to understand and practice. In addition, clinical chemistry courses also get a fairly high percentage of 28.5%. Meanwhile, during Covid-19, students cannot practice directly in the laboratory freely, so it isn't easy to apply for the required courses in the form of practice.

Table 6. Important Courses but Difficult to Understand and Practice

Courses	Total	Percentage (%)
Hematology	10	6.3
Clinical Chemistry	45	28.5
Parasitology	20	12.6
Laboratory Quality Control	61	38.6
Laboratory Management	22	14
Sub Total	158	100

Based on **Table 7** shows that students often access the internet. This can be seen with the highest percentage of 88.9%. On the other hand, students use Google more often (69%) to search for study materials than YouTube (61%). However, in downloading subject matter via the internet, students sometimes reach the criteria (55.3%).

Table 7. Technology Utilization

Indicator	Percentage (%)	Criteria
Internet Access		
1. The intensity of internet access	89%	Very Often
Access Social Media		
2. The intensity of accessing social media via Facebook, Instagram, Twitter, and Whatsapp	74.3%	Often
Learning Resources		
3. Search for subject matter as a learning resource through Google	69%	Often
4. Looking for subject matter as a learning resource through YouTube	61%	Often
5. Conducting discussions in the form of discussion forums regarding subject matter via the internet	61%	Often
6. Downloading course materials via the internet	55.3%	Sometimes

Table 8 shows that sometimes students have difficulty following the Hybrid Learning learning system with 57.3%. However, 50.2% of students assessed that sometimes the use of technology could improve skills, solve problems, and think critically. On the other hand, 58.2% of students sometimes feel motivated in the hybrid learning process in learning motivation. Sometimes students also feel an interest in using an online learning system. However, the intensity of using the Hybrid Learning learning system is often carried out in practical courses with a percentage of 62.6%.

Table 8. Distance Learning Process

Indicator	Percentage (%)	Criteria
Internet-based Learning		
1. Having difficulty in following the Hybrid Learning learning system	57.3%	Sometimes
2. Educational institutions/institutions facilitate the Hybrid Learning learning system	61%	Often
3. The intensity of using the Hybrid Learning learning system in practical courses	62.6%	Often
4. The use of technology can improve skills, solve problems, and think critically	50.2%	Sometimes
Motivation to Learn		
5. Motivation in the learning process Hybrid Learning	58.2%	Sometimes
6. Interest in using an online learning system	55%	Sometimes
7. Motivation in the learning process via Zoom	57.3%	Sometimes

Table 9 shows that students often feel that the media influences increasing motivation to learn independently. Although they often get assignments that are done personally, 61%, according to table 10. This makes students find it difficult to develop skills to work with a team.

Table 9. Provision of Facilities

Indicator	Percentage (%)	Criteria
1. Media affects increasing motivation to learn independently	68.3%	Often
2. Get assignments done in groups	57.3%	Sometimes
3. Get tasks done privately	61%	Often

Discussion

Based on the research results, students understand hybrid learning, and they often use smartphone devices to find learning resources. However, students feel that the laboratory quality control course is the most difficult subject to understand and practice in the learning process. For this reason, with the current Covid-19 condition, students need the use of technology. From the findings, students often access the internet. This shows that real evidence of life changes has occurred before our eyes. This is in line with Tavitiyaman et al. (2021), where these changes make the learning process use the internet more often.

However, not all learning through the internet shows good results. Students find it difficult to understand the Laboratory quality control course. This is because they have to practice. Government policies related to the learning system are not in line with the facilities provided for the learning process. There are still students who rarely download subject matter via the internet because of internet quota is provided; some courses at the Medical Laboratory Technology Study Program in Associate Degree of Health Polytechnic Ministry of Health Manado cannot be done online. Although Lapitan et al. (2021) state that it takes speed to adapt to the new normal, the results of this study indicate that it is not easy to adapt, especially to the online learning process.

Not all students from various fields of study programs can adapt. Students open social media far more often during the online learning process than looking for subject matter through YouTube or Google. This is because there is no guide in conducting online learning, especially courses that require practice. Thus, these findings are not in line with Code et al. (2020), which states that technol-

ogy can support students' teaching and learning processes. This study indicates that not all teaching and learning processes can be supported through the same technology because each course has different characteristics.

On the other hand, students do not understand how to use technology to support online learning. Therefore, in line with Delialioğlu (2012) that the process of designing and using a learning system is very important. Thus, this research offers a learning system that is tailored to the characteristics and needs of the Medical Laboratory Technology Study Program students. Delialioğlu's (2012) results do not significantly explain a learning system that can improve student learning outcomes. Therefore, this study shows that blended learning is one way to improve students' understanding of the laboratory quality control course.

The burden of educators is providing learning and having to follow developments and plan to learn based on hybrid learning. However, in reality, students have difficulty in the learning process. This study indicates that, in reality, educators are quite difficult in assisting students in finding and creating independent learning, as expressed by Triyono and Utami's (2017). Thus, when educators can create independent learning, students have difficulty with this method. Innovating also requires conformity to student learning styles. This study indicates that students still do not fully feel the impact of using technology to improve skills, solve problems, and think critically. Therefore, the research results of Winanti et al. (2019) are not enough to innovate and master the material (Prahani et al., 2020). However, educators must also understand the evolving technology and student learning conditions because this study illustrates that students sometimes feel interested in using online learning systems. They have a crisis in motivation to learn through zoom.

The implication of this research is to show that so far, students have had difficulty understanding the learning process. Thus, researchers offer a blended learning system. Blended learning is an alternative to improving the learning process. Although in this study it has not been analyzed in depth. But looking at the condition of students during the online learning process shows that they are also still minimal in getting assignments in groups. Although the media influences increase the motivation to learn independently, the motivation to learn through hybrid learning is still relatively low. Based on the results of previous studies showed the effectiveness of blended learning in the student learning process.

However, educators should also consider digital technology and ICT characteristics because they feel that the motivation in the learning process through Zoom is low. In line with Maulana and Iswari (2020), online learning has a stressful impact on students. This is because they are difficult to carry out the learning process that should be practiced. But instead, they have to learn about it online amidst the Covid-19 pandemic policy. For this reason, this research focuses on the learning process carried out during the Covid-19 pandemic. This is to add to the repertoire of researchers' knowledge in the future in developing learning technology. Because learning through applications such as zoom is not enough to motivate students to learn. The results of this identification and analysis also provide an illustration that media affects increasing motivation to learn independently.

This study provides another overview of traditional learning described by Pratama and Dermawan (2020). Weaknesses in the learning process are not only found in conventional learning. Hybrid learning-based learning models can also have the same impact. This is due to the low motivation to learn students. In addition, students still often use social media not to find learning resources but only for entertainment. According to Bocconi and Trentin (2014) results, blended learning is indeed said to be effective. Therefore, it is necessary to increase learning media through blended learning.

CONCLUSION

This article aims to find out student responses in blended learning in the new normal era. This concludes that although online learning provides convenience in accessing the internet, students still use technology not to find learning resources. Besides that, they also have difficulty in understanding the courses that should be done in practice. Therefore, this research implies that technology that continues to develop must be accompanied by user understanding. Educators who are also lecturers have tried to innovate learning and are pressured to develop innovative learning

systems, but students are still not wise in accessing social media. In addition, lecturers must also analyze and plan a learning system that is easy to use and adapted to student learning styles. Therefore, laboratory quality control is considered in terms of student responses to difficult subjects to understand during the online learning process. So that further research is needed in developing a learning system that can increase student learning motivation. Not only up to motivation, but students also have to understand how to use technology well. This is a challenge for lecturers to innovate for laboratory quality control courses. Future researchers can develop innovative learning models in the laboratory quality control course.

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