



Needs Analysis of Blended Learning Development on Instructor Training at Basarnas

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ARTICLE INFO

Article history:

Received 18 August
2020

Received in revised
Form 06 September
2020

Accepted 16 October
2020

Available online 01
November 2020

Keywords:

Needs Analysis; Blended
Learning; Basarnas

ABSTRACT

Blended learning facilitates learning by providing various learning resources and considering the characteristics of learners. This study aims to conduct a needs analysis for the development of blended learning in instructor training at Basarnas. Needs analysis is carried out to explore information about gaps and needs as well as student profiles that can be used as a basis or reference in developing blended learning at the next stage. This research is a descriptive study with quantitative approach. Data collection was carried out by means of observation, interviews, and distributing questionnaires. Interviews were conducted with the Head of the Sub-Directorate for Planning and Standardization of Basarnas Personnel, while the filling of the questionnaire was carried out by the Basarnas Rescuer who will attend instructor training as many as 50 respondents. The results show that instructor training at Basarnas can be designed in the form of blended learning by using a project-based learning approach to overcome existing limitations or gaps so that the implementation of blended learning that combines the delivery of face-to-face learning and online learning can be an intervention that is suitable to be applied and appropriate. with the needs at Basarnas.

1. Introduction

The development of information and communication technology has had a big influence on the way a person does the learning process. With the internet network, a person can access and utilize information from a variety of various sources. The development of information and communication technology has given rise to a learning concept known as blended learning (Berga et al., 2021; Indrawan et al., 2019; María et al., 2016).

Blended learning is a combination of traditional classroom learning with online learning to enrich students' understanding in learning (Lee & Hung, 2015; Pribadi, 2018). The use of blended learning adopts innovative learning practices that meet the needs of a diverse student population, facilitate student development and academic success to encourage 21st century learning, namely creativity, communication, collaboration, critical thinking and problem solving (Brannan, 2018; Broadbent, 2017). Blended learning has been shown to improve the quality and learning outcomes (Bazelais & Doleck, 2018). The use of blended learning has been proven to be effective in increasing access to quality training (Balasubramaniam et al., 2018). Blended learning facilitates learning by providing a variety of learning resources and paying attention to the characteristics of learners (Coyne et al., 2018; Dwiyoogo, 2018).

Blended learning has now been widely applied to universities and the world of training in North America, England and Australia (Dwiyoogo, 2018; Hrastinski, 2019; Lee & Hung, 2015). The combination of face-to-face online learning has been promoted and encouraged to increase the number of students to meet the demands of modern times and to achieve effective learning outcomes (Baragash & Al-Samarraie, 2018; Lim et al., 2016). Today it is important to apply new technologies and learning methods that are flexible and encourage students to acquire the necessary professional skills (Asarta & Schmidt, 2020; María et al., 2016). Previous research explained that to support meaningful learning and interaction, there are three key components. The three components are learning models (pedagogical models), learning and learning strategies, and learning technology (Dabbagh & Bannan-Ritland, 2005).

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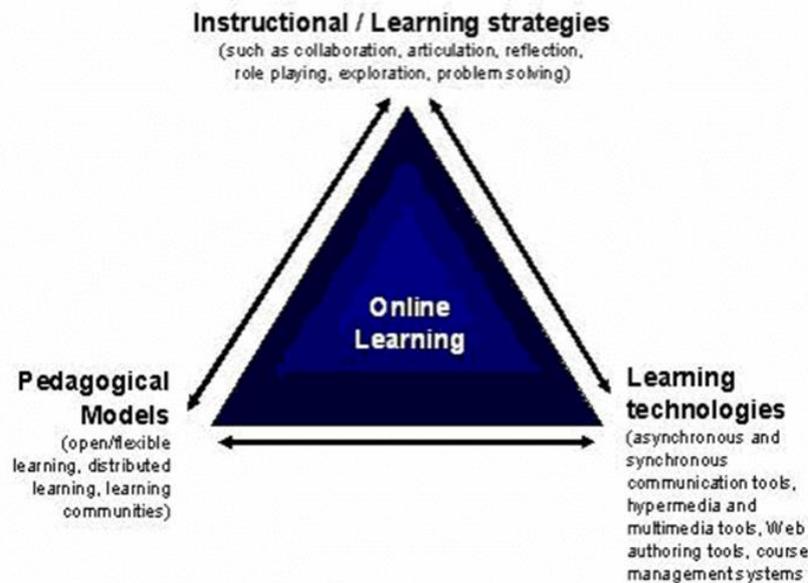


Figure 1. Three Component Model for Online Learning

The application of learning strategies includes collaborative learning, independent learning, articulation, games, roles, reflection, exploration, and website-based problem solving. Learning technology is a device used to distribute learning materials online and can implement learning strategies, such as: asynchronous and synchronous, communication devices, hypermedia and multimedia, web course management systems (CMS), and learning management systems (LMS). The pedagogical model is related to the form of online learning itself, namely flexible learning, distributed learning, and so on. These three components, working as a system, support each other in creating a learning model through cyberspace (Gjestvang et al., 2020; Prawiradilaga, 2012).

Learning activities with an active learning and learning management system (LMS) approach can improve learning performance compared to classes that are only done face-to-face (Sit & Brudzinski, 2017). The case study-based learning design (case-based method), which is applied in developing online learning can improve the quality of learning (Luo et al., 2018; Sit & Brudzinski, 2017). To determine an online learning design that describes the learning activities to be carried out, a needs analysis is needed including a needs analysis and an analysis of the characteristics of the participants. The results of this analysis provide information about who the students will be participating in the training and how to make online learning settings that describe the learning activities undertaken.

Human resource development in the field of search and rescue aims to create human resources who are professional, competent, disciplined, responsible, and have integrity (Law No. 29/2014 on Search and Rescue). As a first step, efforts to make this happen is through training organized by the National Search and Relief Agency (Basarnas). The training aims to improve competence including aspects of knowledge, attitudes and skills so as to produce graduates who are skilled, disciplined and able to carry out tasks well. Basarnas Instructor Training aims to improve instructors' competence to be able to carry out their duties and functions in facilitating search and rescue technical training learning programs.

Training was held to solve problems related to human resource performance. Training is a form of learning activity to improve individual competence. Training programs are held with more specific objectives than other learning programs in general. Instructor training organized by Basarnas still applies the conventional way where training is still held face-to-face. This study aims to conduct a needs analysis for the development of blended learning in instructor training at Basarnas.

2. Methods

This research is a descriptive study which was conducted in September to October 2020 at Basarnas. This study aims to conduct a needs analysis and analysis of the characteristics of students which can be used as a basis or reference in developing blended learning in instructor training at Basarnas.

Data collection was carried out by means of observation, interviews, and distributing questionnaires. Observations were made to gather information about the implementation of instructor training at Basarnas. To strengthen the results of observations, interviews were conducted with the Head

of the Sub-Directorate for Planning and Standardization of Basarnas Personnel, to explore information about gaps and needs related to instructor training at Basarnas, while filling out the questionnaire was carried out by the Basarnas Rescuer to gather information about the profile of the characteristics of students who will participate. Instructor training at Basarnas.

Interview data were analyzed descriptively, while the completed questionnaire data were tabulated using cross tables, frequency and frequency percentages. The computed data and presented in the table, interpreted and then analyzed to draw conclusions. The information percentage shown in Table 1.

Table 1. Information Percentage in Table

0% = There is no	51 – 59% = More than part
1 – 20% = So little	60 – 80% = Most of the
21 – 40% = Fraction	81 – 99% = Almost all
41 – 49% = Almost in part	100% = All
50% = Partly	

3. Result and Discussion

Research result

The analysis of the needs for developing blended learning in instructor training at Basarnas is carried out so that the blended learning products developed are based on background gaps and existing needs, so that this development product becomes an alternative solution to the problem of these needs.

The results of interviews conducted by researchers with the Head of the Sub-Directorate for Planning and Standardization of Basarnas Personnel Development, show that there are gaps and needs for the development of blended learning in instructor training at Basarnas. The conclusion of the interview results is presented in Table 2.

Table 2. Results of Interviews with the Head of the Sub-Directorate for Planning and Standardization

Question	Answer
What is an overview of Basarnas Instructors?	Basarnas instructors are very limited, not proportional to the amount of technical training that must be carried out. To overcome this, Basarnas gave additional assignments to the Rescuer to teach.
How is the implementation of instructor training at Basarnas?	Implementation of instructor training is still conventional, requiring face-to-face and centralized implementation at the Basarnas Training Center. Participants must leave their assignment for training.
How are the media and learning resources used?	Media and learning resources have not received optimal attention. The instructor becomes the only source of information and dominates the learning process. Participants tend to be passive, only accepting the material presented.
How are the learning methods and strategies used?	The methods used include lectures, questions and answers, demonstrations and practice. To explore the material being studied, an independent class assignment is given face-to-face.

In addition to conducting interviews, researchers also analyzed the characteristics of students by distributing questionnaires to 50 respondents, namely Basarnas Rescuers who would attend instructor training. The results obtained from filling out the questionnaire by respondents are the profiles of students which are presented in Table 3, 4, 5, 6, and 7.

Table 3. Age of Students

Alternative answers	F	%
< 20 Year	0	0%
20 – 30 Year	26	52%
31 – 40 Year	21	42%
> 40 Year	3	6%
Amount	50	100

Table 3 shows that more than some respondents (52%) are in the age range of 20-30 years, the rest, namely almost half (42%) are in the age range 31-40 years, very few (6%) are at the age above. 40 years and none (0%) under 20 years of age. From the data above, it can be concluded that almost all of the students who will attend instructor training at Basarnas are in the age range between 20 and 40 years, only very few are over 40 years old and none are under 20 years old.

Table 4. Ownership of Computer / Laptop / Smartphone

Alternative answer	F	%
Yes	50	100%
No	0	0%
Amount	50	100

Table 4 shows that all respondents (100%) stated that they have a personal computer / laptop / smartphone and none (0%) do not have a personal computer / laptop / smartphone. From the data above, it can be concluded that all students already have a computer / laptop / smartphone, and there are no students who do not have a personal computer / laptop / smartphone.

Table 5. Frequency of Accessing the Internet

Alternatif jawaban	F	%
Often	37	74%
Often enough	13	26%
Rarely	0	0%
Never	0	0%
Amount	50	100

Table 5 shows that the majority of respondents (74%) stated that they frequently access the internet, only a small proportion of respondents (26%) stated that it was quite frequent, and no respondents (0%) stated that they rarely or never access the internet. From the data above, it can be concluded that the frequency of accessing the internet by students, most of the participants stated that it was often, a few others stated that it was quite frequent, there were no students who said they rarely or never accessed the internet.

Table 6. Discussing or Chatting via the Internet

Alternative Answer	Frekuensi (F)	Prosentase (%)
Often	16	32%
Often Enough	20	40%
Ralery	14	28%
Never	0	0%
Amount	50	100

Table 6 shows that a small proportion of respondents (32%) stated that they often had discussions or chats via the internet, another small part (40%) stated that they were quite frequent and a few others (28%) stated that they were rarely and there were no respondents (0%) who stated that never discuss or chat over the internet. From the data above, it can be concluded that discussion or chat activities via the internet are often carried out by a small number of students, a small number of others stated that they were quite frequent and rare, but there were no students who stated that they had never discussed or chatted via the internet.

Table 7. Use of various learning media

Alternative Answer	Frekuensi (F)	Prosentase (%)
Very important	36	72%
Quite important	13	26%
The usual	1	2%
Not important	0	0%
Amount	50	100

Table 7 shows that the majority of respondents (72%) stated that the use of various learning media was very important, a small proportion of respondents (26%) stated that it was quite important, very few (2%) stated that it was normal and none (0%) stated that it was not urgent. From the data above, it can be concluded that the use of various learning media, most of the students stated that it was very important, a few stated that it was quite important, very few stated that they were ordinary and none said they were not important.

Discussion

Needs analysis is carried out to measure the level of gaps that occur in learning from what is expected and what has been obtained. In conducting a needs analysis, an analyst must know the problems faced and determine the appropriate intervention. In developing blended learning, needs analysis is used as a basis for determining learning activities and developing learning products to be developed.

From the description of the data above, it can be seen that the analysis of the development needs of blended learning in instructor training at Basarnas includes needs analysis and analysis of the characteristics of students. From the results of the researcher interview with the Head of the Sub-Directorate of Planning and Standardization of the Directorate of Manpower Development, it was found that there were gaps and needs for the development of blended learning in instructor training at Basarnas

Basarnas instructors are very limited, not proportional to the amount of technical training that must be carried out. To overcome this, Basarnas gave additional assignments to the Rescuer to teach. Rescuers who are assigned to teach on technical training need to attend Instructor training in order to have the required competencies. Implementation of instructor training is still conventional, requiring face-to-face and centralized implementation at the Basarnas Training Center. Participants must leave their assignment for training. Implementation of instructor training with a blended learning model that combines online and face-to-face learning, so that learning is more effective and efficient.

Media and learning resources have not received optimal attention. The instructor becomes the only source of information and dominates the learning process. Participants tend to be passive, only accepting the material presented. The use of various media and learning resources that can support learning activities and help participants explore the material (Tebbs et al., 2020; Thai et al., 2017). The methods used include lectures, questions and answers, demonstrations and practice. To explore the material being studied, an independent class assignment is given face-to-face. Online learning with a project-based learning approach, namely by giving independent assignments to students which can be combined with online discussion activities. Instructors' direction and supervision can take place virtually (Kacetl & Semradova, 2020; Li et al., 2019).

The analysis that can be carried out is based on the existing gaps according to the table above, namely instructor training at Basarnas can be designed in the form of blended learning using a project-based learning approach to overcome existing limitations or gaps so that the implementation of blended learning combines the delivery of face-to-face learning and online learning can be an intervention suitable to be implemented and in accordance with needs.

Almost all of the students who will attend instructor training at Basarnas are in the age range between 20 and 40 years. With this age range, training participants can be categorized as adult learners. Training participants are functional Rescuer positions, namely skills functional positions with a minimum education of high school/equivalent. Rescuers who will take instructor training are those who already have experience in search and rescue operations so that they have mastered substantially or mastered the material, only need to be trained on how to teach the material effectively and efficiently. All students already have a computer/laptop/smartphone, so that online learning can be done and accessed by students via their personal computer/laptop/smartphone. The frequency of accessing the internet by students is frequent and quite frequent, meaning that the internet has become an inseparable need in every student activity. This can be the basis for the development of blended learning in instructor training at Basarnas.

Almost all students discuss or chat via the internet. This can be the basis for developing blended learning in instructor training at Basarnas to provide a discussion forum feature to facilitate student discussion activities online. Most of the students considered that the use of various learning media was very important. By using a variety of learning media, of course, it can improve the quality of the training carried out. Based on the results of the analysis of the characteristics of the students above, instructor training at Basarnas can be designed in the form of blended learning. The developed blended learning can provide a variety of media and learning resources and can facilitate online discussion activities (Shorey et al., 2018; Soler et al., 2017; Syaiful Romadhon et al., 2019).

4. Conclusion

Based on the results of the needs analysis and analysis of the characteristics of students, it can be concluded that instructor training at Basarnas can be designed and developed in the form of blended learning, which combines face-to-face learning and online learning. The development of blended learning can be integrated with project based learning activities, namely by giving independent assignments to students combined with online discussion activities. The development of blended learning in accordance with the needs analysis is expected to increase the effectiveness and efficiency in the implementation of instructor training at Basarnas.

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