

Blended Learning Strategy for Learning Process in Pandemic Covid-19 (Flipped Classroom Model)

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Blended Learning Research by Flipped Classroom models is conducted using the R n D method at the University level. Based on the results of this research and development, it can be concluded that Blended Learning really helps students to learn independently. Although students still really want a face to face in the classroom, but Blended Learning that combines virtual learning can be the right solution during the Covid-19 pandemic so that learning continues. Students feel the challenges in the Blended Learning model, namely the need for a very high motivation of each individual and the role of the lecturer is very helpful in changing learning patterns that have been in the classroom and are now only done online. But in its application, there are a few obstacles, namely the lack of signal stability in some regions.

Key words: *Blended Learning, Flipped Classroom, Digital Taxonomy Bloom, Online Learning.*

JEL Classification: I21, I23, I25

Background

The Covid-19 Pandemic has had an enormous influence on the development of the education world. Education must change the way learning is done, it proves the opinion (Bishop G. 1989) that education in the future will be more flexible, open, and accessible to anyone who needs education regardless of gender, age, or previous educational experience. Whereas Mason R. (1994) argues that education in the future will be more determined by information networks that allow interaction and collaboration, not school buildings.



The world of education in Indonesia is currently starting to become more advanced. To support the implementation of the "Independent Campus" proclaimed by the Government, several universities in Indonesia have implemented a Blended Learning system and even distance learning with no face-to-face classes. In developing this learning process, it is expected that educators will be able to develop teaching materials and teaching methods that can support online and face-to-face learning activities so that students are able to learn more independently and thoroughly.

The application of Blended Learning is applied to provide answers to the challenges of the 4.0 era and the current state of the Covid-19 pandemic, in order that the development of technology can be in line with the development of education. Lectures in the classroom or Face-to-Face are still important in the world of education in Indonesia, but with the advancement of technology and the current pandemic period being in an online class is the best solution for students to keep learning going.

Various methods were developed in the application of Blended Learning. This is adjusted to the needs and characteristics of the students. The application of Blended Learning now presents its own challenges for Educators to always develop learning methods so that students are able and motivated to study material independently and deeply.

Literature Review

Blended learning is learning that combines online learning with face-to-face learning (Dziuban et al, 2004: 2; Graham 2005: 4; and Mazoloumiyan et al, 2012: 1219); some call it Hybrid Learning (Graham , Allan, & Ure, 2005; Oliver & Trigwell, 2005; Whitelock & Jelfs, 2003). Some research results indicate that blended learning has the ability to improve student learning outcomes. The same thing was done by Lawrie et al (2009: 65) in the development of blended learning that students use to actively learn the application and understanding of material so as to increase student academic achievement. Teaching and learning processes carried out both face-to-face in person and online –or blended learning – really require independence in learning self-regulation (Zimmerman, 2008: 183).

Blended learning becomes a very varied term (Norberg, Dziuban, & Moskal, 2011; Vignare, 2007). Some argue that all learning tends towards mixture, and this new term is only used in new academic realities (Masie, 2006; Ross & Gage, 2006). Blended learning consists of two words, namely Blended and Learning. The word blend means "mixed together to improve the quality so that it gets better" (Collins Dictionary), (Heinze and Procter, 2006: 236), while learning has of course the general meaning of learning, thus at a glance contain the meaning of learning patterns that contain elements of mixing, or merging between one pattern and another. In this case Elenena Mosa (2006) said that what was mixed were two main elements, namely

conventional classroom learning with classroom learning with online learning. This is what is meant by learning that is conventionally done in the classroom combined with online learning both independently and collaboratively, using information and communication technology infrastructure.

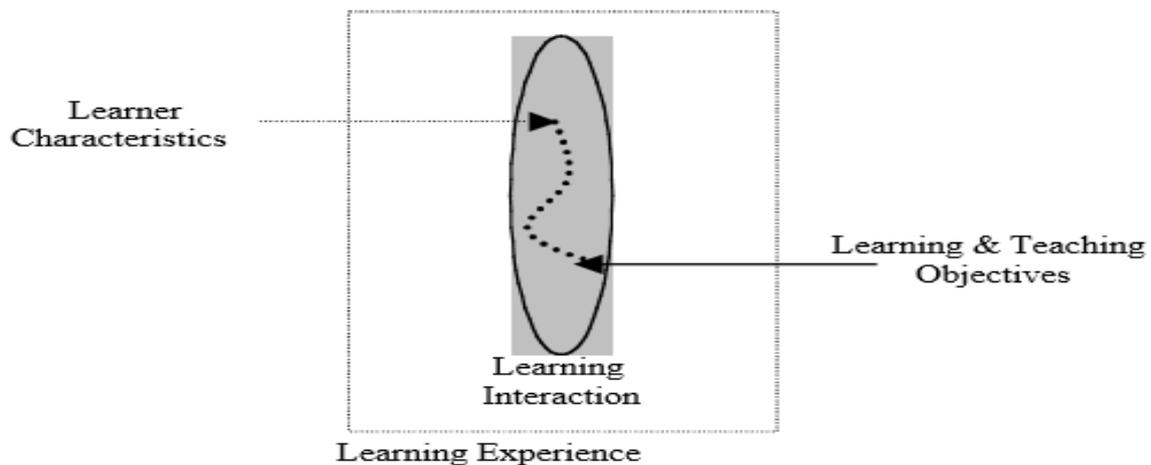
Blended learning is defined as a learning method that combines online interaction with traditional teaching methods (Bonk & Graham, 2006). This form of learning uses interaction in the classroom and the use of web-based materials that are accessed by students outside of class meeting hours (Garrison & Kanuka, 2004). Blended learning specifically refers to situations where 30% to 79% of student interaction is achieved online (Bonk & Graham, 2006).

Previous researchers who have examined the use of blended learning by utilising technological advances, one of which is Mirriahi, Alonzo, & Fox, (2015), who conducted research on a framework of mixed learning for curriculum design and professional development. To realise the potential for changing academic practice, the following must be considered when using the BL framework:

- (1) This framework is intended as a formative tool, and therefore should not be used rigidly to define BL practice.
- (2) This framework is intended to be a self-assessment instrument for academic staff to identify their current level of practice to determine areas of expertise and areas that can be further developed.
- (3) The framework must form discussions around BL across higher education institutions. This can help ensure that all stakeholders at the system level have the same understanding and expectations to provide the necessary support mechanisms such as technology infrastructure, resources, and support for academics to redesign their programs to BL.

Another aspect was stated by Draffan & Rainger (2016), regarding the "Challenges to Blended Learning" model. The 'Challenges to Blended Learning' model (see Figure 10) focusses on the importance of identifying challenges in learning interactions that shape student learning experiences. The two perspectives (i.e students and teachers) offered cannot cover all issues related to interactions that occur in mixed learning situations, but are expected to be able to highlight several features that must be evaluated. At present it is very important to acknowledge the concerns that arise with the use and proficiency of technology related to learning activities, whether their use is explicit as with 'learning technology' (e.g. Online discussion boards), assumed (e.g MS Word) or implied such as the use of technology and other aids.

Figure 1. A model for identifying blended learning challenges.



Sources: (Draffan, Rainger, Draffan, & Rainger, 2016)

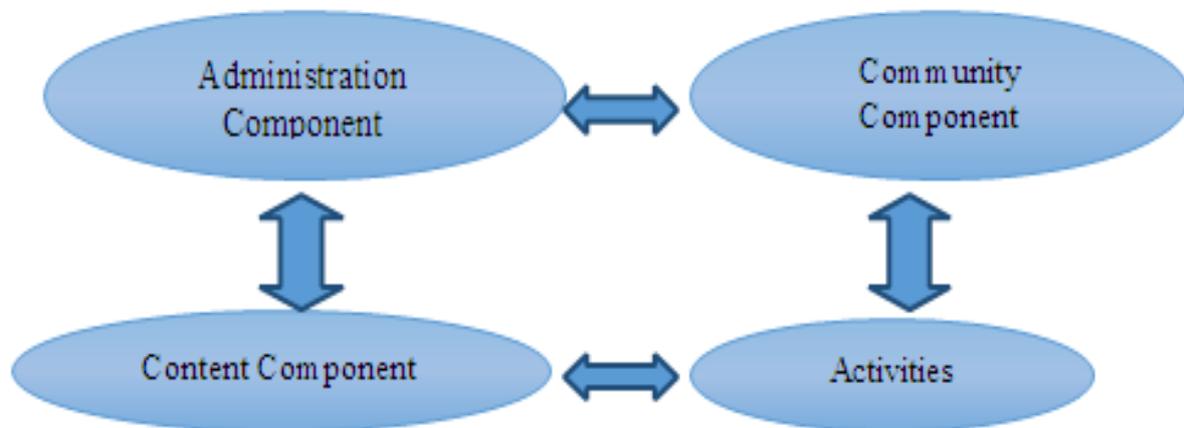
Challenges to learning can be met and overcome using various approaches, but the challenges posed by learning interactions can rarely be overcome by adjustments made on one side of the model only. Meeting the needs of the skills, abilities, and preferences of students to facilitate certain learning interactions requires the cooperation and involvement of both the faculty of education (represented by the teacher's perspective) and students (represented by the student's perspective), together with each staff involved in their support; for example, learning supporting tutors (suggesting new study strategies) or assistive technology (working on technological support).

It is also important to recognise that learning interactions are used to emphasise facts: Learner Characteristics, Learning Interactions, Learning Experiences, Learning Objectives & Teaching. This fact shows that when adjustments are made to the learning situation, there are many possible ways to approach interactions, but few use the direct path. In this model, the teacher's role is to facilitate learning, through facilitating learning interactions.

Blended Learning Theoretical Framework

Georgouli, Skalkidis, and Guerreiro (2008), developed a theoretical framework for blended learning that has four components. These components are: Administration, Content, Activities and Community (see Figure 2). Each of these components is included to enhance learning and be informed by other components. Each component consists of tools that are devoted to motivating students, helping interactions, and promoting the production of new knowledge (Georgouli, et al., 2008).

Figure 2. Theoretical Framework Blended Learning



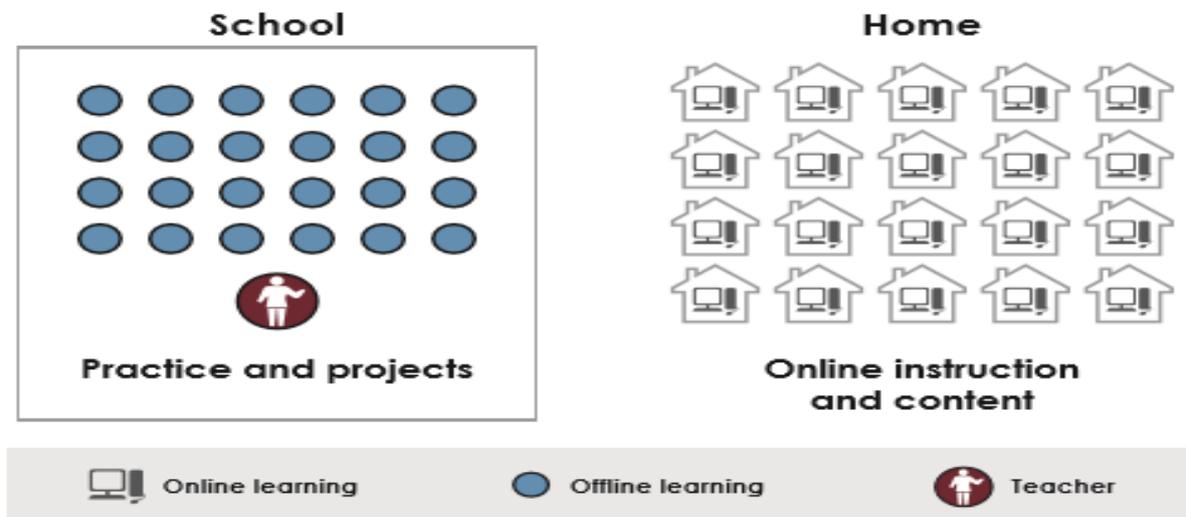
Source: (Georgouli, et al., 2008)

The Administrative component contains the tools needed for the collection of important statistical information, but does not affect pedagogical delivery directly (Georgouli, et al., 2008). However, data collected from this component are used to evaluate and modify instructions for future learning delivery. The Content Component contains these learning tools as; delivery of content, lecture notes and assignments. The Activity component contains; assessment exercises, assignments and projects, lesson plans and simulations. These two components provide information to students; but technology has made shipping possible in new and innovative ways. Finally, the Community component contains tools to serve as a forum for chat, announcements, news, and social media. Students must feel that they are students supported by their peers, and their teachers, when interacting online. Students must feel safe and supported when interacting within the boundaries of this component (Georgouli, et al., 2008).

Flipped Classroom

Implementation of the Rotation model ensures courses or subjects provided by students rotate on a fixed schedule between practical and theoretical learning guided by teachers in schools, but for online classes students get instructions and content that teachers have given in online learning. The Flipped-Classroom model fits the idea that blended learning includes several elements of student control over time, places, paths, and/or steps because the model allows students to choose locations where they receive content and instructions online and to control their speed of movement through online elements.

Figure 3. Flipped Classroom Model



Source: Classifying K-12 Blended Learning

Method

This research uses the R & D (Research and Development) method where the method used in this development uses the ADDIE design model (Analysis, Design, Development, Implementation, Evaluation). The ADDIE model was developed by Dick and Carry (1996) to design learning systems, but in this study was only carried out until the Development stage. The next stages of implementation and evaluation will be carried out in further research.

The learning media in the development of the Flipped Classroom model in Blended Learning will be validated by Blended Learning-based learning experts, subject matter experts in banks and other financial institutions, and students as users in bank and other financial institution classes. This developmental research was conducted for 4th Class Economics Education students with random selection.

Result

The steps of the ADDIE development model consist of 5 stages, namely Analysis, Design, Development, Implementation, and Evaluation. The stages are as follows:

a. Analysis

The analysis phase is the stage for establishing the conditions for determining the model. This initial stage is based on a variety of analysis activities, namely needs analysis, student analysis, analysis of learning objectives, analysis of Graduate Learning Achievement (CPL) and Course Learning Achievement (CPMK), which are based on student characteristics.

b. The Design

The purpose of this stage is to design a flipped classroom model that can be implemented with blended learning.

c. Development

This stage aims to produce material that will be included in the development of a good flipped classroom model based on Bloom's digital taxonomy. The material compiled is revised based on input from the validator. This stage includes the validation and trial of products.

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Development of the Flipped Classroom Model design Analysis

Phase of analysis was chosen as the Flipped Classroom model because it was considered to be very appropriate to be applied to students, but in the Covid-19 pandemic situation this model was carried out by replacing face-to-face through virtual classes with the Zoom Meeting application and through LMS kelase.com. The following stages are prepared:

1. Prepare a learning plan (RPS and RPP)
2. Determine the method to be used
3. Divide and determine the meeting in online learning and virtual learning.

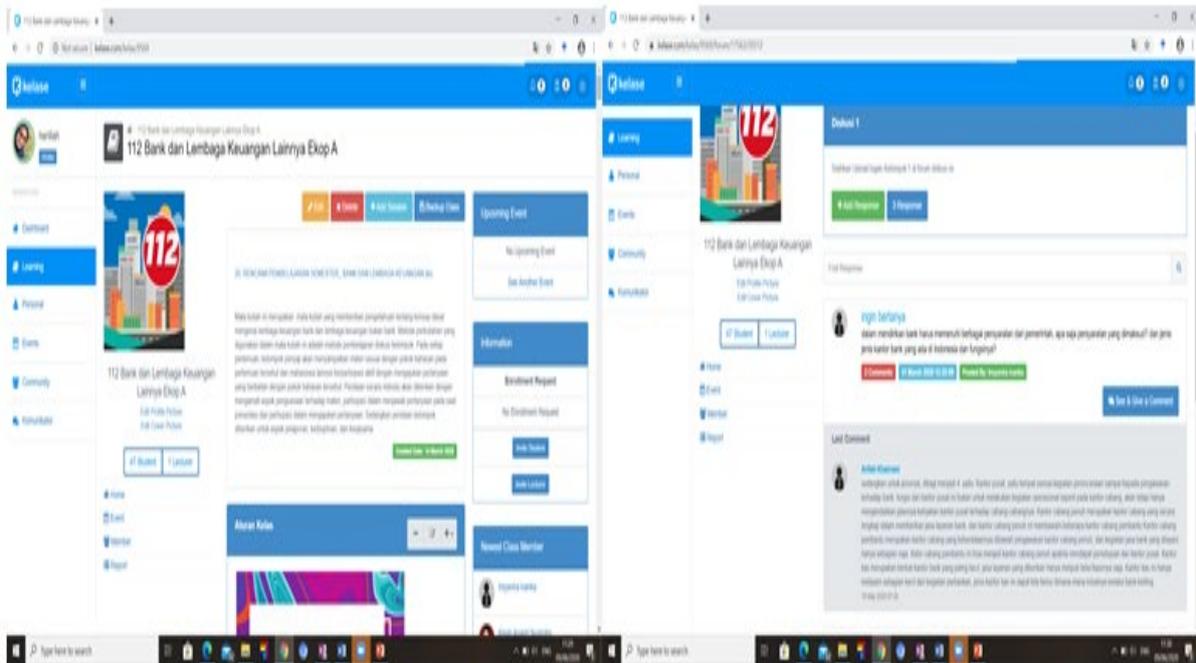
Design

The purpose of this stage is to design a learning medium. This stage includes learning, development activities based on KI and KD above, then carried out:

1. Arranging the material into PowerPoint
2. Creating an account on LMS kelase.com
3. Share and determine meetings in online learning and virtual learning.
4. Making a learning video
5. Adding practice questions
6. Inserting material from various sources

The output description of this learning media is as follows:

Figure 4. Display LMS



Source: Kelase.com

Develop

At the development of learning media, this stage aims to produce good learning media. The revised design is based on input from the validator. This stage includes several steps, namely (a) validation, (b) product trials, and (c) further revisions.

This learning media is validated by material experts (Bank Lecturers and Financial Institutions). The following is a tabulation of expert judgment data:

Table 1: Expert Rating Study Material of Banks and Other Financial Institutions

No	Factors / Aspects assessed	Average Expert Score Rating Material
1	Conformance of Indicators Formulation with Basic Competencies	4.5
	Conformity of Learning Objectives with Indicators	4.3
	Conformity of Material with Objectives, Learning	4.3
2	Logging / Systematics Material logically	4.2
	Clarity of Material Bank and financial institutions	4.5
	Conformity of Material by Subject	4.3

	Conformity of Material with Learning Objectives (Achievement of independent learning ability)	4.3
	Completeness of Material with Learning Competence	4.2
3	Clarity of Media Gallery with material	4.2
	Conformity of Video used with Learning Material	3.7
	Completeness of Material with Learning Competence	4.5
4	Grammar used in Banks and Other Financial Institutions	4.3
	Material Compatibility with Student Characteristics	4.3
	Average Total	4.3

Source: Data processed

Based on the results of media development an assessment conducted by material experts obtained an average score of 4.3 with either category to proceed to the next study.

The validation test was then performed by media experts:

Table 2: Media Expert Rating

No	Aspects Assessed	Average Score of Media Expert Rating
1	Display media attract the attention of students	4.5
2	Media preparation is easy for students to operate	3.7
3	Fonts used are easy to read and clear	4.7
4	Font compatibility with media read clearly	4.7
5	Colour selection of suppressing messages reads clearly	4.3
6	Layout simplicity so that it is easily understood	4.0
7	Composition of text and images	4.3
8	Colour composition on layout	4.0
9	A Selection of background settings	4.3
10	Layout selection does not cause selective attention	4.3
11	Selection learning companion sound, animation	4.3
12	Placement of supporting video material	4.3
13	Selection of supporting image animation material	4.0
14	Design messages relevant to content	4.0
15	Media can be run on a PC or Android	4.7
16	Media compatibility with learning material	4.7
17	The ability of the media to provide a real learning experience outside class for students	4.0
18	Appropriateness of media compilation to show the real thing in student learning	4.5

Average Total	4.3
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Source: Data processed

Validation from media experts obtained an average score of 4.3 so that the media is good to be able to test learning with students.

Table 3: Assessment of blended learning models by students

No	Aspects Assessed	Average Student Assessment
1	This learning media can be operated easily	4.4
2	In my opinion, this learning model is attractive	4.5
3	This learning model is able to display outdoor learning well	4.2
4	I am able to explore thoughts and learning experiences independently	4.0
5	This model is very useful in learning for me	4.5
6	Interactive media in learning independently	4.2
7	I am able to analyse the learning problems provided independently through the material provided	4.7
8	This learning model is a new thing, but I can understand it	4.2
9	This learning model is able to convey learning material clearly	4.6
10	I can run the learning model using LMS on a PC or Android	4.6
11	I am motivated to learn independently	3.7
	Average	4.32

Source: Data processed

Assessment of Blended Learning models done correctly to 150 students got an average score of 4.32. Thus, the media is ready to be tested in class learning.

Conclusions

Based on the results of this research and development it can be concluded that Blended Learning is very helpful for students to learn independently. Although students still really want a face to face in the classroom, Blended Learning that combines virtual learning can be the right solution during the Covid-19 pandemic so that learning continues. Students feel the challenges in the Blended Learning model, namely the need for a very high motivation in each individual; the role of the lecturer is very helpful in changing learning patterns that have been established in the classroom and are now only done online. But in its application, there are a few obstacles, namely the lack of signal stability in some regions.



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