PAPER • OPEN ACCESS

The principles of blended learning design with heutagogy approach thourgh e-ganesha moodle in indonesian language learning

View the article online for updates and enhancements.

The principles of blended learning design with heutagogy approach thourgh e-ganesha moodle in indonesian language learning

I P M Dewantara[1], I K Dibia[2]

[1]Program Studi Pendidikan Bahasa dan Sastra Indonesia, Universitas Pendidikan Ganesha, Indonesia

[2]Program Studi Pendidikan Guru Sekolah Dasar, Universitas Pendidikan Ganesha, Indonesia

Corresponding author's: mas.dewantara@undiksha.ac.id

Abstract. This study aimed to discover the principles of blended learning design with a heutagogy approach through e-ganesha Moodle. The research design used was a qualitative design with Design Based Research (DBR) method. The subjects of this study were students, lecturers, and education experts. The research setting was Indonesian language subject at the Ganesha University of Education. The data collection method used were observation and interviews, while the data were analysed by using the technique proposed by Miles and Huberman. The results showed that there were 8 principles of blended learning design with a heutagogy approach, including (1) the curriculum was open or flexible so that it could be adjusted to the characteristics of students; (2) Learners acted as drivers in determining learning paths, activities, and contents; (3) Preparation of students before the curriculum discussion needed to be done by sending materials before discussions related to learning activities were carried out; (4) Educators acted as facilitators to assist students in increasing self-efficacy; (5) Students were involved in the design of the assessment that was enforced and had flexibility by looking at the existing situation; (6) Synchronous and asynchronous modes occurred individually or collaboratively; (7) Synchronous and asynchronous modes by looking at the involvement of technology and the independence of students could be divided into 6 learning mode designs, namely (a) face to face, (b) face to face tutorial, (c) virtual face, (d) full instruction and content, (e) semi instruction and content, and (f) independent learning; and (8) Reflecting on learning to increase self-efficacy.

1. Introduction

The demand of global development requires the world of education to constantly make changes. The rapid development of information and communication technology has made science a commodity like other economic goods. This development has changed the learning strategy that has been applied to future learning by making the development of information and communication technology as a source and means of learning. Future learning is no longer rigid and tied to time and space. In other words, learning can be done anywhere and anytime.

Although many current learnings uses technology in learning, some argue that the method has not changed even said that nothing has changed for more than 800 years [1]. What about the change in learning in the 21st century with learners who are called digital native or the *Net Generation*? [2][3].

Net Generation are more comfortable with an environment rich in multimedia, especially visuals and audio [2]. Their motivation to learn comes from active interaction in learning and their efforts to answer questions that arise during the assignment. Seeing Net Generation and the development of the 21st century, optimizing learning by utilizing the development of information and communication technology is urgent.

The development of information and communication technology has given ways to various learning methods, such as e-learning and blended learning models. The e-learning method is a way of the teaching and learning process that uses electronic media and uses the internet as an intermediary in the teaching and learning process. Meanwhile, blended learning is a method of teaching and learning that combines conventional education systems with all-digital systems. This means that in blended learning there is direct interaction in the form of discussions between educators and students [4][5][6]. Although a lot of material is obtained using e-learning, the learning process is carried out anywhere and anytime, but it is still less effective and efficient. The implementation of e-learning has various problems, such as there is no interaction in the learning process [7].

The solution to overcome the weaknesses of e-learning is to apply blended learning. The emergence of learning that combines online and face-to-face learning is not only a theory, but has been widely applied both in terms of blended and hybrid learning. Blended learning combining elements of online and face-to-face education is likely to become a major model for learning in the future [8]. Students can access the material freely and are required to be able to study independently because the learning materials are stored online. The teacher and students can provide feedback in the form of questions and suggestions in real time.

On the other hand, in the face of 21st century education, the pedagogy approach, even andragogy, is seen as an approach that is no longer able to prepare students to be ready to develop in the workplace [9]. Different learning approach is needed that provides opportunities for students to be more independent to be able to reflect on what they learn and increase the capacity of students to learn to live in the 21st century. There is a need then to develop an advanced learning approach from the andragogy approach, namely the heutagogy approach [10]. Hase & Kenyon stated that "*… the essence of heutagogy is that in some learning situations, the focus should be on what and how the learner wants to learn, not what will be taught…*" [11]. Heutagogy offers active collaboration between students and lecturers to decide what to learn, including what content is appropriate to learn, how to study it, and how information will be used to prove that a competency has been mastered well. Through this approach, students become active learning agents who have the freedom to determine their own learning with the lecturer as the guidance consultant so that learning autonomy leads to the right goals [12]. The most important thing from heutagogy is self-reflection. Students must reflect on whether a topic needs to be deepened in accordance with the results of their understanding of the topic. Reflection is also carried out by seeing whether the materials and products are appropriate or need to be redesigned. This is called *doubleloop* in heutagogy.

Seeing the two big demands of the 21st century, namely the use of technology and the output of graduates who have lifelong learning abilities in order to be able to adapt and be creative in a complex era, efforts are needed to improve the quality of learning. Judging from the learning approach, so far there seems to be no significant change. For this reason, it is also necessary to apply a new approach in accordance with the direction of the demands of the 21st century, namely through the heutagogy approach. Therefore, this study will examine how the principles of blended learning design with a heutagogy approach through e-ganesha Moodle are applied in learning. Moodle e-ganesha is an e-learning platform developed by Ganesha University of Education to support the learning process more effectively.

Many studies on blended learning have been carried out, as well as studies on the heutagogy approach. However, how blended learning has a heutagogy approach in learning to answer the demands of the 21st century has never been done. Therefore, it is important to know the principles of blended learning design with a heutagogy approach as a guide in carrying out learning which is adjusted to the characteristics of existing learning objectives and activities. This study takes the setting of Indonesian

language subject which is a compulsory subject in higher education for both vocational and non-vocational students. The Indonesian language subject is aimed at fostering positive attitudes (characters) and Indonesian language skills for various purposes. Therefore, the heutagogy concept is carried out based on the substance of the study. In other words, the autonomy of the freedom to choose materials, strategies and assessments will still refer to existing goals.

2. Research Methods

This study used a qualitative research design with the Design Based Research (DBR) method. The use of the DBR method is carried out by repeated trials. DBR is divided into 4 stages, namely identification and problem analysis, development of a prototype program, testing implementation, and reflection [13]. The research subjects were students, lecturers, and learning experts. The number of subjects in this study were 62 people who came from two classes of vocational students and non-vocational students. This study took the setting of Indonesian language course in higher education.

Data collection methods used were interview and observation methods. The interview method was used to collect expert data related to ideal principles that need to be considered in the formulation of blended learning design principles with a heutagogy approach through e-ganesha moodle. The observation method was used to see the learning situation and learning demands of the 21st century. The observation method was also used to observe the implementation of the learning design principles that had been prepared. The data analysis technique used was the data analysis model of Miles and Huberman with four stages of analysis, namely data collection, data reduction, data presentation, and conclusion drawing [14].

3. Results and Discussion

To discover the principles of blended learning design with a heutagogy approach through e-ganesha moodle, this study followed the 4 stages of DBR, namely identification and analysis of problems, development of program prototypes, testing implementation, and reflection. The final test results show 5 stages in developing the principles of blended learning design with a heutagogy approach, namely (1) student self-preparation, (2) question and answer, (3) designing assessments, (4) determining learning modes, and (5) reflection. The results of observations and interviews show that students are enthusiastic in determining the learning design to be implemented, students also look very enthusiastic about doing their learning assignments. The discussions that occurred between students and lecturers help students understand the main objectives of the learning they are participating in. A clear and jointly designed assessment also provided an overview of what must be done to complete learning. Negotiation in planning learning content and learning activities as well as assessment of results was new to students and is recognized to make students more responsible for their learning. The implementation of blended learning with a heutagogy approach through e-ganesha Moodle can be explained through the learning steps as follows.

1) Prepare students by sending materials related to objectives, material coverage, draft assessment before the discussion take place

It is important to send material before the discussion takes place to prepare conditions that support effective discussion between students and lecturers regarding the learning. This step is in accordance with the main principle of heutagogy that student-centred learning [15]. Delivery of materials before the class meeting is also intended to build the first step in creating an environment that stimulates learning autonomy[16]. Materials are sent via e-ganesha Moodle as shown in Figure 1 below.

Figure 1. Material Delivery via E-Ganesha Moodle.

Figure 1 shows materials related to objectives, material coverage, and assessments sent in two formats, namely in the form of videos and documents to accommodate learners' learning styles and to attract more attention in exploring the material provided. The difference in the format of the material also provides the opportunity to repeat the material in a varied way so that it is not boring.

2) Provide opportunities for students to ask questions that are not understood or things that are deemed necessary to be emphasized during face-to-face sessions in class

During class meetings, students ask questions regarding the materials that have been sent previously. This is important so that students understand better the objectives of the course and get a comprehensive picture of their learning. This step is a realization of the principles of a flexible and open curriculum to be negotiated with students in accordance with existing changes [17]. For this session, the lecturer must prepare himself with all possible questions that arise. Students do not only need a map to negotiate the learning system, they also need a compass to manage the entire learning process that is negotiated [18]. A lot of support is needed by educators/facilitators who have to take steps to help students increase their self-efficacy to manage the learning process. Discussion opportunities are also given through the discussion feature in e-ganesha Moodle before meeting in class.

3) Determine the learning assessment design

The results showed that students had difficulty determining the assessment design to measure their success in attending lectures. Therefore, the method chosen was to provide direction regarding the alternative assessment that was carried out and was flexible. This is in line with Hase and Kenyon's opinion that the assessment design is flexible for students to be carried out in the context [19].

4) Determine the mode of learning

Learning modes were mapped according to existing considerations, such as the depth of the material and learning activities. The interesting thing when choosing this mode was the situation of implementing blended learning with a heutagogy approach that took place before and in the middle of the Covid-19 pandemic. The blended learning modes that occur are as follows. The blended learning mode with the heutagogy approach through e-Ganesha Moodle from the findings of this study looks like a prototype in Figure 2 below.
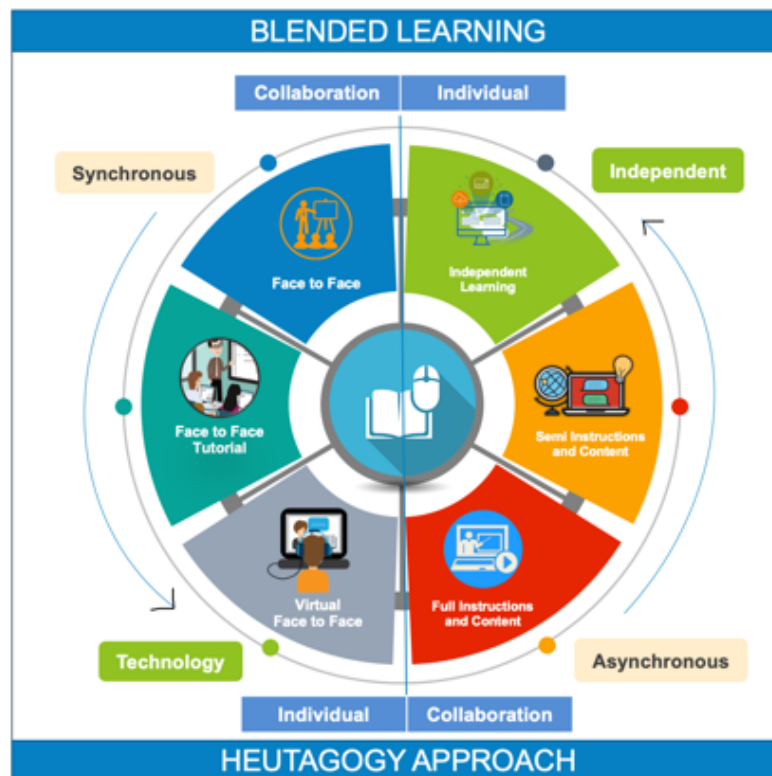
Figure 2. Design of Blended Learning with Heutagogy Approach thourgh E-Ganesha Moodle.

The followings explained Figure 2:

1) Learning takes place in the classroom. The classroom can be a space in the form of a physical building or a virtual room atmosphere when a person is learning, either at the same time or at different times when the instruction is delivered by the teacher.
2) The learning mode is broadly divided into two modes, namely synchronous and asynchronous learning that happened face to face in the classroom and e-ganesha Moodle.
3) Looking at the use of technology in learning, synchronous learning is grouped into 3 types, namely (1) face to face without the involvement of technology, (2) face to face using computer/laptop and internet facilities, and (3) virtual face-to-face.
4) By looking at the independence of learners in relation to the availability of instruction and learning content, asynchronous sessions occur in 3 forms, namely (1) asynchronous with instructions and content provided fully by the lecturer. Students follow the instructions and study the content provided; (2) asynchronous with the instruction and content that demands the independence of students to learn more deeply; and (3) asynchronous with instruction and very limited content from the lecturer, the content of teaching materials is found by students independently from various sources. The results showed that mobile phones were the most widely used means of accessing learning content.
5) Synchronous and asynchronous learning with the classification can take place independently or collaboratively.

Face-to-face learning occurs when lecturers and students conduct lectures in real classrooms that are held on campus. Learning like this is traditional learning with learning characteristics that focus on learning led by lecturers to teach a group of students synchronously [20]. Synchronous class like this allows several interactions to occur, such as independent study, pair discussion, class discussion, and others. Although face-to-face learning allows learning to take place independently, the main focus of

this learning is interaction and collaboration in the classroom. Learning settings like this, the classroom is led by the instructor or teacher [20] [21] [22].

Face-to-face learning with the use of technology occurs when a lecturer wants to explain a practical technique both in terms of information retrieval and techniques for doing something. Learning like this can take place in class or in the lab. Implementation of face-to-face technology assisted in the form of tutorials in class is carried out in learning to write quotes and writing bibliography. This mode uses Technology-rich instruction, which is a structured learning program with traditional learning features using technology such as electronic whiteboards, internet access, digital textbooks, and others [21].

Another mode of synchronous learning is virtual face-to-face. Learning with this virtual face-to-face mode occurs at the same time but at different places [24]. Learners prepare themselves to attend class individually from their respective places. Such learning focuses on virtual face-to-face instruction that encourages students' interactive responses to connect with teachers and other peers [20]. The main feature of this mode is the communication device. Learning in this mode occurs both through audio-visuals in the form of conferences and through discussions in the form of chat.

The interesting findings of this study are also demonstrated by the classification of the asynchronous mode into three groups. The three groups can be distinguished from the independence of content search from each mode. This finding is different from the findings of Chaeruman which classifies this mode into independent asynchronous and collaborative asynchronous forms [23]. This difference lies in the basis of classification. The results of this study indicate that each mode can be done individually or collaboratively. The difference is the content provided by the teacher. The less content provided, the greater the independence needed by learners to find sources of information, understand, and put it into practice.

5) Reflection
Reflection is carried out every time the learning session ends. Reflection on learning is intended so that learners can reflect on what they have planned and see the results they get. This is where 'double loop learning' in heutagogy occurs in Indonesian language subject. A key factor in the heutagogy which makes it different from other pedagogical approaches is the idea of 'double loop learning' [19]. In double loop learning, students when faced with a problem reflect on possible solutions and act on them. It produces actions and results, besides, reflecting the process of resolution of the learner's knowledge, perceptions, and actions [19][12].

Starting from the prototypes tested, it can be concluded that the blended learning design principles with a heutagogy approach through e-ganesha Moodle are as follows.
1) The curriculum is open or flexible so that it can be adapted to the wide characteristics of students;
2) Learners as drivers in determining learning paths, activities, and content;
3) Preparation of students before the curriculum discussion needs to be done by sending materials before discussions related to learning activities;
4) Educators act as facilitators to help students increase their self-efficacy to manage the learning process. The questions asked by students act as trackers of the support needed in the learning process that can encourage collaboration between educators and students;
5) Learners are involved in the design of the assessment that is enforced and have flexibility in adjusting to the existing situation;
6) Synchronous and asynchronous modes occur individually or collaboratively;
7) Synchronous and asynchronous modes by looking at the involvement of technology and the independence of students in learning can be divided into 6 learning designs, namely (1) face to face, (2) face to face tutorial, (3) virtual face, (4) full instruction and content, (5) semi instruction and content, and (6) independent learning; and
8) Reflect on learning to increase self-efficacy.

4. Conclusion

Technological developments and the demands of 21st century learning encourage the discovery of learning design principles that are able to answer existing challenges and demands. The principle of blended learning design with a heutagogy approach can be used as a guide in implementing learning which always provides autonomy to students to increase their self-efficacy. Situation analysis of determining the mode of learning in relation to learning materials and activities also needs attention. The characteristics of vocational and non-vocational students who are in the same class also need to be considered. Therefore, adjustments can be made by sticking to the principles of blended learning design with a heutagogy approach. Blended learning with a heutagogy approach provides opportunities for students to be more responsible for their learning and tends to create a learning atmosphere for the growth of intrinsic motivation. Moodle is a platform that can accommodate differences in learning styles by preparing materials that match the characteristics of students. This method is proven to attract enthusiasm and motivation of students in learning. Furthermore, it is necessary to conduct a study related to a blended learning model with a heutagogical approach by utilizing an appropriate learning technology platform in relation to responsibility and institutional motivation in learning for vocational students and non-vocational students.

References

[1]   Kuit J A and Fell A 2010 Web 2.0 to pedagogy 2.0: A social-constructivist approach to learning enhanced by technology *Critical design and effective tools for e-learning in higher education: Theory into practice* (IGI Global) pp 310–25

[2]   Oblinger D, Oblinger J L and Lippincot J K 2005 *Educating the net generation* vol 56 (Washington DC: EDUCAUSE)

[3]   Prensky M 2001 Digital natives, digital immigrants *Horiz.* **9**

[4]   Auster C J 2016 Blended learning as a potentially winning combination of face-to-face and online learning: An exploratory study *Teach. Sociol.* **44** 39–48

[5]   Pandit R K 2018 Blended learning. Madhav Institute of Technology and Science

[6]   Su F 2019 *Blended learning pedagogy in higher education. In: The Encyclopedia of Educational Innovation* (London: Springer)

[7]   Rusman 2011 *Model-model Pembelajaran, Mengembangkan Profesionalisme Guru* (Jakarta: Raja Grafindo Perkasa)

[8]   Watson J 2018 Blended Learning: The Converge of Online and Face-to-Face Education

[9]   Kamenetz A 2010 *DIY U: Edupunks, edupreneurs, and the coming transformation of higher education* (Chelsea Green Publishing)

[10]   Ashton J and Newman L 2006 An unfinished symphony: 21st century teacher education using knowledge creating heutagogies *Br. J. Educ. Technol.* **37** 825–40

[11]   Hase S and Kenyon C 2013 *Self-determined learning: Heutagogy in action* (A&C Black)

[12]   Blaschke L M 2012 Heutagogy and lifelong learning: A review of heutagogy practice and self-determined learning *Int. Rev. Res. Open Distrib. Learn.* **13** 56–71

[13]   Amiel T and Reeves T C 2008 Design-based research and educational technology: Rethinking technology and the research agenda *J. Educ. Technol. Soc.* **11** 29–40

[14]   Miles M B and Huberman A M 1994 *Qualitative data analysis: An expanded sourcebook* (Sage)

[15]   Hase S and Kenyon C 2003 Heutagogy and developing capable people and capable workplaces: strategies for dealing with complexity

[16]   Blaschke L M and Hase S 2019 Heutagogy and digital media networks *Pacific J. Technol. Enhanc. Learn.* **1** 1–14

[17]   Hase S and Kenyon C 2007 Heutagogy: A child of complexity theory *Complicity An Int. J. Complex. Educ.* **4**

[18]   Hase S 2009 Heutagogy and e-learning in the workplace: Some challenges and opportunities *Impact J. Appl. Res. Work. e-learning* **1** 43–52

[19]   Hase S and Kenyon C 2000 *From andragogy to heutagogy* (Ulti-BASE In-Site.)

[20] Siripongdee K, Pimdee P and Tuntiwongwanich S 2020 A blended learning model with IoT-based technology: effectively used when the COVID-19 pandemic? *J. Educ. Gift. Young Sci.* **8** 905–17

[21] Staker H and Horn M B *Classifying K-12 blended learning* (Innosight Institute)

[22] Cleveland-Innes M and Wilton D 2018 *Guide to blended learning* (Burnaby, British Columbia: Commonwealth of Learning)

[23] Chaeruman U A 2017 *Pengembangan Model Desain Sistem Pembelajaran Blended* (Universitas Negeri Jakarta)