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Need Analysis to Design Blended Learning Model: An Instructional Design to Create a Dynamic, Engaging and Student-Centered Learning Environment

Badaruddin
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
dharsappa@gmail.com

Muh. Basri
Engineering Faculty
Universitas Muhammadiyah Parepare
Parepare, Indonesia
bacibasri@yahoo.com

Mas'ud B
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
masud_umpar@yahoo.com

Siti Hajar Larekeng
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
sitiHajar7773@gmail.com

Henny Setiawati
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
hennys73@yahoo.co.id

Nurdin Noni
Science Education Faculty
Universitas Negeri Makassar
Makassar, Indonesia
nurdinnoni@yahoo.com

Ika Yanti Ziska
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
ikayantiziska@gmail.com

Marwati Abd. Malik
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
maswati_pare@yahoo.co.id

Rafi'ah Nur
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
rafiahnur@yahoo.com

Baso Jabu
Science Education Faculty
Universitas Negeri Makassar
Makassar, Indonesia
basojabu@yahoo.com

Muhammad Agung
Engineering Faculty
Universitas Negeri Makassar
Makassar, Indonesia
agung@unm.ac.id

Hartoto
Science Education Faculty
Universitas Negeri Makassar
Makassar, Indonesia
hartoto@unm.ac.id

Muhammad Siri Dangnga
*Teacher Training and Education
Faculty*
Universitas Muhammadiyah Parepare
Parepare, Indonesia
muhammad.siri@gmail.com

Abstract—Industrial Revolution 4.0 in education emphasizes how to design new approaches to education so that students are prepared to navigate the flows of global change. Blended learning is a strategic instructional model developed in order to fulfill the industrial revolution 4.0 challenges. The present research aims to explore the design of blended learning model based on need analysis and intended to create a dynamic, engaging and student-centered learning environment for English Language Teaching (ELT). This research was a case study with survey method. The subject of this research consisted of the teacher, student and educational staff involved in implementing a blended learning model in higher education. Data collected by using in-depth interview, observation and documentation. Research results showed that the teacher applied various and different technologies in ELT such as edmodo, and WhatsApp. Moreover, the management of blended learning was still not optimal because of the limitation of teacher's experience and knowledge.

Keywords—blended learning, ELT, need analysis, industrial revolution 4.0, technologies

I. INTRODUCTION

Higher education has a principal role to produce qualified and marketable output in order to anticipate the global era challenges. One of them is the *ASEAN Economic Community* (AEC) that presses human resource with skills such as *leadership, digital literacy, communication, emotional intelligence, entrepreneurship, global citizenship, Problem Solving, and Team-working*. Thus, English skill as an international language is a necessity. The development of the Internet and Web 2.0, mobile communication and social media become English as a global communication tool [1].

Industrial Revolution 4.0 in education emphasizes how to design new approaches and strategies to education so that students are prepared to navigate the flows of global change. The good teacher needs to acquire a large set different kind of interdisciplinary knowledge and applies contemporary learning strategies use as research and problem-based learning connected with brain-based technique, and

information communication technologies provided scholars from diverse disciplines [2]. To realize the quality of quality learning, the role of teachers is very strategic, to be able to take advantage of computer and internet media to help them develop learning media [3]. A research result showed that multimedia software had a positive effect on the students' grammar learning so that technology can lead to students' satisfaction [4]

Several researchers have been developing instructional model optimizing the use of ICT in teaching English through the implementation of a blended learning model. Blended learning broadens the traditional face-to-face classroom interaction by adding the domain of modern technology [5]. It signifies the inclusion of computer technology providing online or offline activities and materials in the mix, rather than implying this is a wholly new approach to teaching and learning [6]. The use of technologies creates a positive learning experience, grows motivation in English learning, and has positive feeling and confidence in their language performance [7]. Getting students to engage proactively in the learning dynamic can increase both their learning outcomes and their satisfaction [8].

II. LITERATURE REVIEW

A. Blended learning

Getting ready for and actualizing instructive change is sufficiently troublesome when everything happens inside the limits of a framework in a given context [9]. To manufacture bolster for a mixed learning activity, begin by investigating interstudy information and taking advantage of the staff learning about the understudy populace to associate the move to mixed learning within general area objectives. It is expected to enhance the learning process at school and vocation preparation by utilizing innovation to make more customized, further learning opportunities [10]. The enhancement in learning outcomes due to blended learning has been partially recognized to the more strategic use of classroom time [11]. Blended learning refers to a change of learning approach paradigm; teacher-centered learning becomes student-centered learning. There are three common modalities for teaching: traditional face-to-face (F2F), online, and blended. Blended learning employs a mixture of synchronous and asynchronous techniques by means of face-to-face, online, and offline methods for instruction [12]. The use of blended learning focuses on the challenges of combining face-to-face and online learning using a relatively new online tool [13]. Before the emergence of online and blended teaching, educational technology training focused on technology integration, which involves learning how to incorporate technology into classroom instruction [14]. A blended learning environment significantly promotes students' interest and facilitates active participation in numerous classroom activities [15]. The integration of online materials into foreign language courses is a natural consequence of accessible, high-quality language resources on the Internet that can be adapted for language teaching [16].

Jordan in Badaruddin et al. stated that there are two approaches in blended learning; (1) *self-regulated approach*, the student interacts automatically using web-based audio-video clips, simulation, and virtual learning environment to reach learning achievement and (2) *pedagogical approach*,

the teacher chooses an interesting pedagogical approach for the student or without educational technology in order to attain the learning achievement [17]. Moreover, blended learning may be a feasible strategy for integrating technology to maximize learning opportunities adapted to the latest societal trends, for updating curricula and pedagogical approaches [1]. Learning achievement can be seen based on four indicators, namely (1) improve the student's learning achievement, (2) Well- implemented, (3) motivate the student and get a positive response from student [18]. Blended learning offers 5 (five) interactions, namely:

1. Student-to-student interaction
2. Student-to-teacher interaction
3. Student-to-community interaction
4. Student-to-material interaction
5. Student-to-technology interaction [19].

Technology provides some opportunities for the learners to communicate with native speakers of the language they are learning, or other learners studying the same language, but who don't share the same mother language, so they are forced to make use of English to communicate [20]. Synchronous Utilizing technology in the classroom, as well as online, is deemed to be most successful if its use relates to learning outcomes [21]. Using a blended learning approach allows teachers to be more informed about our students' successes and failures and perhaps even our own [22]. There are numerous components influencing the nature of mixed learning. Some of them are solid Internet association, nature of instructional techniques, content introduction, viable utilization of time, and bolster gave to the students. On the off chance that one of these components needs in nature of mixed taking in, the nature of training given may decrease [23]. Three areas stand out for consideration about how blended courses are conceived: variations in design and approaches, alignment of course components, moderation of interactivity and expectations, intentional classroom technology and support of course re-design [21]. Thorne [24] stated that several benefits of technologies for online learning:

1. It allows for the natural and creative development of ideas.
2. A number of people can contribute at the same time.
3. Using simple techniques, ideas can be commented upon, amended, or added to, while retaining the original document.
4. It is possible to work across different time zones and shorten development time.
5. Working in this way can help to forge global links and overcome cultural differences.
6. Everyone can work at a time, place and pace to suit their preferred learning styles.
7. To be successful designers need to follow the same principles, as mentioned above.
8. The same disciplines of meeting deadlines and responsiveness also need to apply in this virtual environment.

B. ICT for Blended Learning

The nature of learning is being augmented and accelerated by new digital tools and media [25]. The use of ICT in Education has brought huge change. ICT an example

of a technology that is a powerful change agent [18]. ICT is an example of a technology that is a powerful change agent [26]. The use of ICT has become a norm in the teaching and learning context [27]. ICT make natural tools in education because of the simple and fundamental fact that learning is largely based on dealing with information [28]. With the quick progression of web innovation and its viability in different fields, a lot of educators are digging further into utilizing innovation in their instructing to build up their understudies' dialect abilities [29]. Technology has become a tool for making the learners innovative and also became a source for motivating the learners towards learning [30].

A variety of ICTs that can be used in creating effective learning environments for blended learning, namely:

1. Technologies in the classroom, such as interactive whiteboards, PowerPoint and audience response systems;
2. Virtual communication tools that enable users to engage in discussions and activities over the internet, including audio files, discussion boards, e-lists, discussion groups, chat or conferencing, email, newsgroups, polling, questionnaires, web forms and video conferencing;
3. Social-networking software, such as instant messaging and phone calls, podcasts, social-networking sites, video clips, virtual worlds, weblogs, and wikis becomes more dominant in the learning and teaching context. Even, now extensively utilized by students and staff in their personal life;
4. E-learning systems that is, online environments that bring together a range of tools to support e-learning, such as VLEs, conferencing systems, group collaboration software, and group sites;
5. Mobile learning using mobile phones, laptops and tablet PCs [31].

III. RESEARCH METHOD

This study was a survey method that aimed to identify the needs to design blended learning for a dynamic, engaging and student-centered learning environment. The survey was conducted on 10 teachers and 80 students at UM Parepare and Universitas Negeri Makassar. To collect the data, the researcher used observation, in-depth interview and documentation. *Observation* was used to identify learning activities, while *In-depth interview* was used to obtain information regarding the student and teacher's perception of the learning process. Furthermore, the data were analyzed using a qualitative descriptive technique.

IV. RESULT AND DISCUSSION

A. E-Learning in Universitas Negeri Makassar

E-learning in Universitas Negeri Makassar is developed to facilitate hybrid learning ensuring effective and efficient learning. A Moodle platform is a learning management system used to manage hybrid learning. This platform has three main points, namely:

1) Class configuration

This configuration prepares menu "administration used to manage the class. A blended learning environment significantly promotes students' interest and facilitates active participation in numerous classroom activities [15].

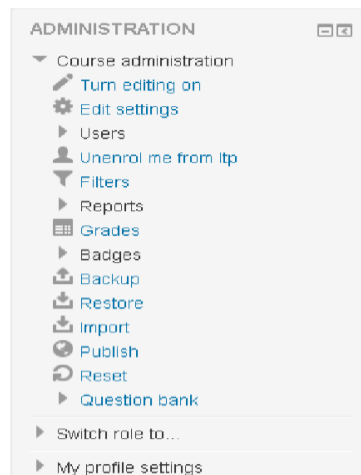


Fig. 1. Administration class Menu on Moodle

2) Management of teaching materials

Technology has become a tool for making the learners innovative and also became a source for motivating the learners towards learning [30]. Management of teaching materials provides a variety of menu option for educators to present learning materials and how to manage them, including books, files, folders, IMS, content package, label, page, and the URL.

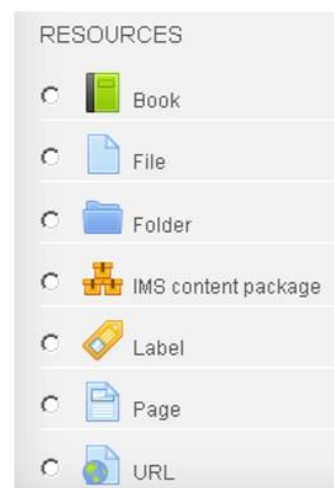


Fig. 2. Management of teaching materials

3) Management of Activity

Synchronous Utilizing technology in the classroom, as well as online, is deemed to be most successful if its use relates to learning outcomes. The last management is activity management. This feature provides a variety of activities that can be selected lecturers; they are providing an online assignment, chats, forums, quizzes, etc., as follows:



Fig. 3. Management of Activity

To monitor the implementation of e-learning, UNM prepares a monitoring room.

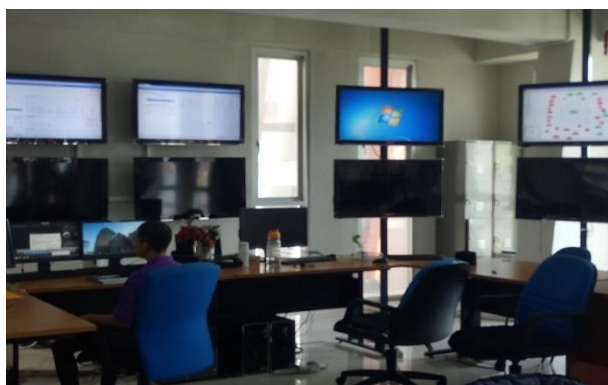


Fig. 4. E-learning Monitoring Room of UNM

B. Need analysis to Design Blended Learning at UM Parepare

1) Learning Platform

To manufacture bolster for a mixed learning activity, begin by investigating understudy information and taking advantage of staff learning about the understudy populace to associate the move to mixed learning within general area objectives [10]. The survey results regarding the implementation of blended learning models obtained the information that is known that none of the lecturers who implement blended learning models. It is caused by a lack of knowledge of the lecturers of the concept of blended learning models. However, of the 10 respondents, there were 7 (70%) of respondents who used the facilities of social media as a means to conduct online learning. This facility has been partially recognized to a more strategic use of classroom time[11,13].

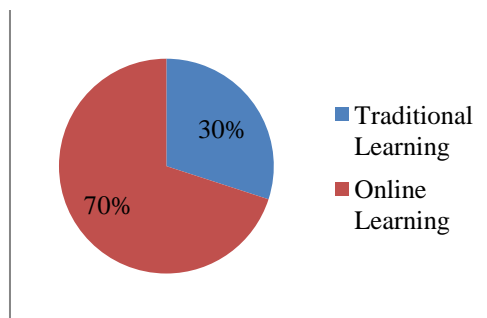


Fig. 5. Online Learning

The understanding of ICT use encouraged some teachers to carry out online learning at UM Parepare, especially English department. They acknowledged that by utilizing innovation, it make more customized and further learning opportunities [10]. Blended learning was directed to build the student's self-regulated learning and their learning achievement [11,12,18,19]. They chose *Edmodo* and *WhatsApp* as a learning platform. Both of these platforms were only used to convey information on the activities and the material being taught. *Edmodo* was used to present the teaching materials. Meanwhile, *Whatsapp* was simple software used to chat and share the materials.

2) Online Learning Activities

Overall activities are presented in the course plan document. Online learning activities planned by teacher refer to student center learning approach. An online learning environment designed by teacher aimed to promote students' interest and facilitates active participation in numerous classroom activities [15]. The material taught, mostly, was presented on Edmodo or share it via WhatsApp. Both Virtual communication tools enable student and teacher to engage in discussions and activities over the internet. Therefore, these media make the learners and teacher innovative in learning [25, 26, 27,30].

3) Instructional resource

A variety of ICTs that can be used in creating effective learning [31]. K. Thorne stated that allows for the natural and creative development of ideas [24]. The findings indicated that all teacher chose video or youtube and web as a source to develop their teaching material (100%). Most teachers used textbook (75%) and audio (80%).

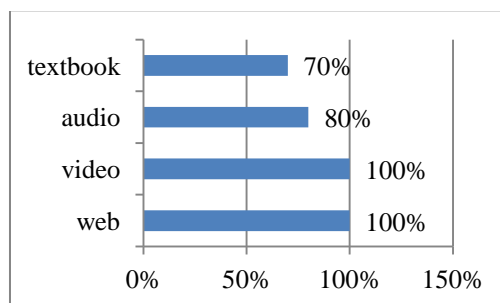


Fig. 6. Instructional resource

In addition, one of the respondents already applied *Screencast O Matic*, as a medium for displaying teaching material.

C. Barriers to implementing Blended Learning

Technology provides some opportunities for the students, provide communication with native speakers [20]. The student interacts automatically using web-based audio-video clips, simulation, and virtual learning environment to reach learning achievement [17]. However, the respondents stated that one of the barriers to implementing blended learning was an internet connection. Moreover, the teacher and student knowledge due to blended learning were still restricted.

V. CONCLUSION

Blended learning is an instructional model facilitating the traditional meeting and online meeting with technology. Blended learning technology provides various opportunities; they are (1) enable to create an effective and interesting learning environment, (2) encourage the learner's self-regulated learning and student achievement, as well as (3) enable unlimited time to learn. Thus, to manufacture blended learning, it needs understanding due to ICT use. In addition, begin by investigating the needs to design blended learning.

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