

Blended Learning Method Within Indonesian Higher Education Institutions

Zamzami Zainuddin^{1)*}, Cut Muftia Keumala²⁾

¹⁾Faculty of Education, The University of Hong Kong, Hong Kong

²⁾Sekolah Tinggi Ilmu Ekonomi (STIE) Lhokseumawe, Aceh
Room 420, 4/F, Meng Wah Complex The University of Hong Kong
Pokfulam Road, Hong Kong. E-mail: zem.aceh@gmail.com*

Abstract: This article aims to explore the potential development of a Blended learning model in Indonesian higher education institutions. The paper attempts to explain the concept of the Blended learning in terms of theory and practice, based on the literature discussed in several reputable international journals. Initially, this method proposes to improve the deficiencies of a traditional learning model which is lack of technological resources and at the same time to improve the gap of e-learning practice which is lack of a face-to-face learning experience. In the blended instruction, students will learn through a face-to-face interaction in the classroom and supported by learning media such as a Website, Video or Learning Management System (LMS). Meanwhile, the use of technologies is ordinarily used for students' learning and peers interaction outside of class, especially for online discussion and homework submission. This method emphasizes that learning activity should not only occur in the classroom but also outside of the class through online media.

Key Words: blended learning, hybrid learning, learning management systems, e-learning, conventional learning

Abstrak: Tuliskan Artikel ini bertujuan untuk menggali potensi pengembangan metode pembelajaran *Blended learning* pada perguruan tinggi Indonesia. Tulisan mencoba memaparkan konsep pembelajaran *Blended learning* dari segi teori dan praktik berdasarkan literatur dari beberapa jurnal internasional bereputasi. Lahirnya metode ini bertujuan untuk menyempurnakan kekurangan dari metode pembelajaran konvensional *face-to-face* yang tidak menggunakan media teknologi dalam pembelajaran, serta kekurangan pada metode pembelajaran *e-learning* yang mengesampingkan pembelajaran tatap muka. Dalam metode ini siswa akan belajar secara tatap muka di kelas yang didukung oleh berbagai media pembelajaran seperti *website*, video, dan *Learning Management System* (LMS). Dalam praktiknya, penggunaan media teknologi sebenarnya lebih banyak digunakan untuk proses pembelajaran di luar kelas terutama untuk diskusi *online* dan mengumpulkan tugas. Metode ini menekankan bahwa pembelajaran bukan hanya terjadi di kelas saja secara tatap muka, tetapi juga di luar kelas melalui media *online*.

Kata kunci: *blended learning*, *hybrid learning*, *learning management systems*, *e-learning*, pembelajaran konvensional

INTRODUCTION

The rapid development of technology, communication, and information, especially the internet has become a demand for teachers in Indonesia to be able to use it as a source of positive learning media in supporting the teaching and learning process. The use of media technology provides benefits for teachers and students to access the materials and interact in *face-to-face* conventional learning, and also outside the

classroom through an online platform. In addition, media technology also brings learners in learning activities anywhere or what so-called the *ubiquitous learning environment* (Hwang & Chen, 2017). One of the positive values of Internet technology, for example, enables learners to discuss and collaborate to solve problems both in class and outside of class (Halili, et al., 2015).

Asfar and Zainuddin (2016) revealed that the use of media technology in the 21st century has become a

demand and necessity for every teacher to encourage students to study independently, collaboratively, creatively and critically in solving problems. In addition, the media technology also allows students and lecturers to easily access the learning materials anytime and anywhere through various sites provided free by several institutions in the world. The various learning resources are currently provided by many World institutions through their website and can be used as a source and medium for active and interactive learning. Learning and media resources are also called *Open Courseware* or *Open Educational Resources* (OER).

Richter and McPherson (2012) additionally argue that *Open Courseware* provides a variety of free learning resources on various websites, and allows everyone to access various content. Thus students can freely access and download various content, watch lessons in various online videos for free anytime and anywhere to suit their needs. These free materials are provided by world-renowned institutions such as Harvard University, MIT, or Khan Academy, BBC News, and VOA News.

In addition, by integrating technology in the field of education, traditional classroom activities such as lecturing lecturers, homework, and exams can be transferred to website or Learning Management Systems (LMSs) (Fu, 2013). In addition, technology plays a very important role, because it is able to facilitate communication between fellow learners, as well as between learners and teachers outside the classroom (Fisher, 2009). Technology also has a very important role in student-centered learning method, which instructs students to learn actively and independently without always depending on the teacher as a source of knowledge (Gebre et al., 2014). Therefore, there is no doubt that if the technology is utilized properly and wisely, it will contribute greatly to the development of education, particularly in Indonesia.

Although technology has been widely used in a various educational institution, it still has several limitations such as ignoring direct physical interaction among students and the assessment conducted by lecturers is only done through an online platform called e-learning (Kanuka & Anderson, 2007). In e-learning, the learning only focuses on the online or long-distance interaction without face-to-face interaction. Online learning only limits the instructor or teacher to assess virtually. However, face-to-face learning model plays an important role where the instructor or teacher could interact with students physically and emotionally (Sun, et al., 2008).

Besides the limitations in online learning through e-learning, limitations are also found in traditional face-to-face learning in the classroom. Staker and Horn (2012) identify that there are still many universities in the world that use traditional learning methods where the source of knowledge only relies on the teachers, and they spend much time in the classroom just to listen to the lecture which at the end makes students feel bored and become passive in learning. Similar cases are still common in Indonesian universities where teachers intend to be dominant in class and take over the class by lecturing and performing traditional asking and answering session to students.

Lecture methods are often practiced through one-way communication which then makes students sit to passively listen, and pretend to understand what is being lectured. This lecture model learning is usually more focused on the oral session in delivering the material, asking and answering questions rather than solving problems with the critical discussion (Dalsgaard & Godsk, 2007). In other words, traditional classroom-based learning such as lectures tends to focus more on the knowledge of the instructor than the construction of learners' knowledge. Although the conventional method is relatively cheaper, since it does not use media technology, but it still has many limitations and is not relevant to a learning method recent knowledge age.

One of the conventional lecturing limitations, for example, is that learning media focuses only on textbooks that will keep students stuck on a single source. In fact, some universities in Indonesia also rarely use journal articles as learning resources which are actual sources written to respond to contemporary issues. In addition to using text media both books and journals, the use of learning resources from websites and videos should also be popularized in Indonesian universities. Later, traditional learning tends to produce low levels of student involvement, and students often pay less attention to the subjects they are studying (Carini, et al., 2006). Nguyen (2011) also notes that traditional classroom activities also focus on textbooks and lecture talks; students tend to be released from critical discussion activities. Students who are trapped by this passive method will exhibit some of the negative habits such as boredom, anxiety and pernicious subjects (Freeman, et al., 2007).

Therefore, to address the existing limitation in the conventional learning method which tends to ignore the existence of technology and the e-learning methods which ignore face-to-face interaction, this research

aims at developing a combination method of e-learning and conventional learning method called Blended learning. Blended learning is alternative teaching method that tries to combine conventional classroom-based learning methods to technology-based learning or *e-learning* (Zainuddin, 2015). Traditional learning and *e-learning* dichotomies have their own limitations. Therefore, combining these two methods into one solution and alternatives is well-known and has been practiced through various forms of research. This learning method does not ignore face-to-face interaction within the classroom and the use of technology media both in class and out-of-class as distance learning.

BLENDED LEARNING CONCEPT

The evolution of technology has transformed the culture of teaching and learning rapidly. Various New media technologies have contributed to education such as the Internet, online learning, Computer-Assisted Learning (CAL), Web-Based Distance Learning (WBDL) and other technologies. Therefore, Blended learning is an alternative method that is highly relevant to recent digital era, which integrates the traditional methods and methods based on multimedia technology. It is believed that traditional learning by focusing on teachers as a center of knowledge is no longer relevant in today's digital age, and should be supported by technology-based media (Wang & Heffernan, 2010).

Blended learning is one of the methods of learning in the knowledge age, where teachers take a role as facilitators, motivators, mentors, and consultants. Teachers also play a role as 'classmates' where they share ideas and share knowledge with students. This Blended or Hybrid method emphasizes students to learn openly, flexible as needed, critically to solve problems, orientate the empirical world with real action through experiential learning (Zainuddin & Attaran, 2015). In learning, learners are also encouraged to research, ask, discover, create, and collaborate to share new ideas. In addition, they must also use various supporting media technologies such as computers and the Internet as a dynamic interaction medium.

Blended learning is the integration of conventional teaching methods with the digital world. This learning model aims to change the culture of learning-teaching which is centered on the teacher (teacher-centered learning) to students student-centered

learning. Learning activities are conducted actively and interactively and are more practical than listening to passive lectures in the classroom. In addition, teachers take a role as the classroom facilitators for students in solving problems. Mortera-Gutierrez (2005) mentions that this method of learning is a combination of several different methods such as the use of textbooks, Web sites, LMS, video and other communication media.

Poon (2014) also stated that Blended or Hybrid learning has the potential for changing students' learning methods in the digital age which encourages a positive impact on them. Students and teachers have more opportunities to interact and communicate, both inside and outside the classroom. According to Porter, Graham, Spring, and Welch (2014), mixed learning has contributed to building strong interactions between learners and teachers, as well as among fellow learners. Blended learning also does not neglect traditional learning because face-to-face interaction in the classroom and online outside of the classroom remains done (Halili & Zainuddin, 2015). Blended learning allows learners to learn independently outside of the classroom, getting the material online, and engaging in two-way communication with other learners and instructors outside of study hours. This method also establishes students' intelligence on the use of technology (technological literacy), and access educational information as a learning resource (information literacy).

Historically, O'Connor et al. (2011) suggest that mixed learning emerged in education because of significant computer and Internet growth. Historically, this Hybrid learning began popular in practice as a pedagogical concept in early 2000 (Guzer & Caner, 2014). Poon (2014) also says that the term Blended learning was introduced in 2000 when e-learning lost its credibility and was changed by the Blended learning model. He also notes that this mixed learning has been widely applied in many college and school institutions around the world. In addition, it has also been widely practiced by various training institutions and companies.

BLENDED LEARNING ADVANTAGES

Some people assume that the use of technology in Blended learning will override the student's social interaction process. In fact, this is a false assumption because Blended learning actually supports students to interact not only physically in the classroom but

also through online connection outside the classroom. Discussion activities take place either offline in class or online outside of classroom learning session. In addition, discussion activities take place both between learners with teachers and among the learners themselves. Therefore, student interaction on the Hybrid method can be done for 7 hours in a day or 7 days a week without limit (Kuo et al., 2014).

Previous research has also reported that students' social interactions in learning environments using technology media are more effective than in conventional classrooms. Without using technology, students tend to physically interact only in the classroom and ignore interactions beyond study hours. It can be assumed that the student's social interaction will not decrease as the technology medium is integrated into the classroom. Instead, the use of technology will help students interact easily with all communities, both inside and outside the classroom. Missildine et al. (2013) report that the Hybrid class has established interactive learning. Other studies also report that students can enrich the interaction with other students inside and outside the classroom because teaching and learning activities are not limited to just the classroom, but everywhere (McLaughlin et al., 2013).

Blended learning becomes an important alternative approach to resolve the limitations of face-to-face methods and online learning (Graham, 2005). Blended learning has reformed teaching-learning activities from teacher-centered to student-centered. Student learning activities are more active than giving passive lectures, and students also have more opportunities to develop their ideas in solving existing problems. Various scientists and practitioners believe that by combining conventional learning and e-learning, it will make the learning process becomes more attractive, accessible and effective for adult learners at universities (Zainuddin, 2017).

The delivery of learning materials and topics can be done anytime and anywhere by utilizing media such as LMS, Blog, Wiki, or Facebook. Learners have the freedom to learn the material stored online in the LMS when they are outside the classroom. In addition, the teacher can manage and control the learning conducted by students outside the classroom. Teachers can also ask students to learn the topic before coming to class by preparing additional tasks, notes, and questions. The learning activities in the *Hybrid* class are performed in a flexible and non-rigid manner. Teachers can modify the learning based on students need and be as creative as possible so that learn-

ing can work effectively and enjoyable. This learning approach will also build teachers' responsibility to learners not only in the classroom but also outside the classroom. Zainuddin (2017) states that in the Blended learning model, teachers have plenty of time to provide *feedback* on student development outside the lesson hours, and also have the opportunity to motivate students and answer unresolved questions in the classroom.

BLENDLED LEARNING CHALLENGES

Indeed, learning with the concept of Hybrid in addition to having many advantages, it also has shortcomings that must be considered. One of the challenges is requiring careful preparation for a teacher to apply this method. Teachers should have skills in using the technology and should spend a lot of time in developing the method, especially during the initial implementation period. They should also take plenty of time to develop the material in accordance with this method, setting up of assessment methods, and to be active in the learning process 24 hours to answer and give a statement on the online forum at LMS. In addition, teachers need to prepare materials from various digital sources such as a Website and video which are then integrated into the LMS and thus students can learn from the available sources. Zainuddin and Attaran (2015) mention that there are still some obstacles in designing technology-based learning such as the limited ability of teachers in designing or selecting content based on video, animation or simulation, and if the teachers do not obtain sufficient training, the implementation of the learning method will be failed.

Another classical challenge is the inequality of technological support facilities and infrastructures in an institution, especially those in remote areas of Indonesia. This situation is not only experienced by Indonesia alone but also other countries. One Australian institution states that they face challenges in adopting *Hybrid* learning for remote areas because of the capacity and quality of the internet in these areas is very limited (Poon, 2014).

Then, despite having good technological access, the lack of understanding and awareness of the importance of using educative and effective media technologies is also a major obstacle. Many teachers who are comfortable with conventional teaching methods are reluctant to adopt technology as a learning support medium. This phenomenon usually occurs in senior teachers where they are referred to as *Baby Boom-*

ers generation who were born in the early days of the world war ended. They are more like talking rather than sitting listening and having a habit of less receptive to criticism than the younger ones.

Furthermore, not all students and teachers know that the utilization of media technology is very important in the learning process. Some teachers have also failed to motivate students to use technology as a media of learning. Students tend to use technology as a media of entertainment. Then, one study also reported that in Hybrid-based learning, not all students are able to independently study outside the classroom, most students stop watching videos posted on the LMS because the videos are unattractive and boring (Woo et al., 2008). This is certainly a big challenge for researchers and teachers to be able to design Blended learning in an interesting and enjoyable for students, especially for beginners.

TECHNOLOGY IN BLENDED LEARNING MODEL

Blended learning is a learning method that is popular in instructional media field recently. The learners are required to be able to learn anywhere such as in classrooms, libraries, houses, parks, roads, coffee shops, or cafes and at any time as they wish, either morning, afternoon or evening, and of course with anyone either with teachers, friends, relatives, family or community. Also, blended learning allows students to learn through various learning sources such as textbooks, journals, magazines, newspapers, CD ROMs, videos, radio, television, websites, social media, blogs, LMS, and so on (Zainuddin & Halili, 2016).

One of the blended learning media used by most universities is Learning Management Systems (LMS). Lectures without using LMS can be considered invalid since LMS is also considered as a class. If face-to-face meetings are held in a physical classroom, online face-to-face is done in a class called LMS. This LMS has also been widely used by various universities in Indonesia either self-managed such as State University of Malang ([HTTP://e-learning .um.ac.id/](http://e-learning.um.ac.id/)) or adopted from free LMS service providers.

This LMS is also called the Electronic Learning platform or Course management systems. The majority of LMS is a website-based LMS. It is used for out-of-class learning activities which allow students to access learning materials, interact and collect assignments when they are outside the classroom. Within LMS, the interaction can be done both directly (syn-

chronous) or indirect (asynchronous) (Zainuddin, 2017).

LMS can contain a variety of content such as syllabi, videos, lessons, tasks, quizzes, tests, forums, important schedules, collaboration spaces and assessment methods. Various free LMS service providers can be found on the internet. According to the popularity of LMS in various higher education in 2013, LMS Blackboard (<https://www.blackboard.com>) became the LMS with the largest user in the world, 41%, followed by Moodle (<https://moodle.org/>) as much as 23%, Desire2learn (<https://www.d2l.com/>) as much as 11% and the rest is Vclassrooming (www.vclassrooming.com) (Krasnova & Demeshko, 2015). There are many other free LMS that can be accessed and used as learning media such as Schoology (<https://www.schoology.com/>), Blendspace TES (<https://www.tes.com/lessons>) or Google Classroom (<https://classroom.google.com/>).

Web-based LMS provides a variety of content that supports the effectiveness *Blended learning*. Moodle is one example of a simple and flexible LMS that can be integrated with *Hybrid* learning methods. Moodle offers flexible and dynamic learning process management and satisfies market needs. Moodle allows creating individual learning and collaborative learning where students can interact with friends-peers and their teachers, especially after the completion of learning activities in the classroom. Students can study outside the classroom anytime and anywhere. Many teachers who use the media reveal that they can save on teaching time in the classroom and increase students' active learning to learn independently outside the classroom. Then, face-to-face time in the classroom is mostly used for discussion activities to solve problems (Zainuddin, 2015).

In addition, there are various other Web 2.0 media that support Blended learning such as Blog, Wiki, and social media. These media can be used to build two-way communication between students and teachers outside the classroom, and also facilitate teachers to provide online evaluations either individually or in groups (Schmidt & Ralph, 2014). Majumdar (2012) mentions that Blogs, Wikis, Podcasts, Twitter, MySpace, and Facebook are examples of Web 2.0 which is very popular and can be used as a supporting media in the Hybrid class.

Blogs, for example, have been widely used to build interactions between students and teachers, access shared learning materials and improve students'

ability to manage and write on personal blogs (Garcia, et al., 2012). Other social media sites such as Facebook, MySpace, LiveJournal, and Bebo also allow users to share different content with other users, and create virtual interaction beyond the lesson hours and be more flexible and less formal like LMS (Pempek, et al., 2009). Various learning materials can also be adopted from various media on the internet such as YouTube, BBC News, VOA News, TED-Edu or Khan Academy. For example, Khan Academy (<https://id.khanacademy.org/>) as a non-profit educational institution provides over 3000 videos on various learning materials, including Mathematics and Science lessons, and can be accessed for free (Bishop & Verleger, 2013).

BLENDLED LEARNING METHOD DESIGN

Various strategies can be used in applying this Hybrid method. For example, a variety of learning materials incorporated into the LMS and teachers instruct students to learn the material at home and come to class with a note regarding what they have learned, either a statement or a question. Then the activities in the classroom are more focused on the discussion sessions to enrich and expand the knowledge that has been learned at home. That is, students, come to the class instead of empty glass to be filled with water, but like a glass that has been filled at least a little of knowledge.

In the classroom, students can discuss in groups, make presentations or perform simulation activities and practices on learned theories. Teachers may give lectures but do not present the complete explanation of the topic, but rather provide the introduction and the background. Their role in the classroom turned out to be a facilitator, facilitating dialogue, and assisting students in solving complex and erroneous problems (Oliver & Stallings, 2014). Nevertheless, there is no single model and strategy in the application of *Blended learning* model. Lecturers can apply and modify this approach with different models and with different media according to the students' needs. In designing learning, teachers can understand students' needs such as their learning styles, attitudes, motivations, and interests (Zainuddin, 2015). Each student certainly has a special preference and way of receiving and processing the information presented to them. Therefore, understanding the needs of learners becomes very important to achieve effective and efficient learning goals.

BLENDLED LEARNING DEVELOPMENT POTENCY IN INDOONESIAN HIGHER EDUCATION

The development of technology brings a great influence on the learning styles of learners. Therefore, teachers are required to be able to integrate technology into the teaching and learning process (Erdem & Kibar, 2014). Application of learning with *Blended learning* system is possible to be implemented in various Indonesian universities. This is in line with the development of information and communication technology and the proliferation of supporting applications such as the internet in all universities of Indonesia.

Then, almost all Indonesian students also have direct access to the internet through their gadgets or Smartphones every time. In addition, Indonesia also has a lot of public internet facilities. For example, Aceh province is currently equipped with wide free internet access in various areas such as coffee shops and city parks. A survey in 2010 reported that 93 free Wi-Fi points were spread in Banda Aceh City (Adiwaluyo, 2013). After the Tsunami disaster in Aceh in 2004, hundreds of modern coffee shops were also built with free Wi-Fi facilities, and many students spent much of their time accessing the internet in these places. Firmansyah and Nugrahandika (2014) also expose that in various coffee shops and cafes in Indonesia provides free internet service and students spend their time there to access the internet, whether for mere entertainment or doing the task.

Research conducted by Sugiharto (2016) at a University in Central Java also reports that of 90 students surveyed about the use of internet media, only 1 student who still use cafe to access information. Moreover, 51 students use their personal smartphone, 9 students use a personal laptop and 29 students use both laptop and smartphone. From the above reports, the author believes that the use of technology and the internet access is a common thing for students in Indonesia and is a potential for each college to develop hybrid-based learning media by integrating technology.

Besides, many Indonesian universities already have and manage LMS independently and this is very potential to develop hybrid learning method (Table 1).

The importance of using this method for Indonesian students is also supported by a fact that many students who come to the class are not ready for what they will learn. As a result, the students just sit quietly listening to the lecturer's explanation and pretend to understand (Zainuddin, 2017). Therefore, this paper

Table 1. LMS in Several Indonesian Higher Education

No	Higher Education	LMSs
1.	State University of Malang	http://e-learning.um.ac.id/
2.	University of Indonesia	https://scele.ui.ac.id/
3.	Education University of Indonesia	http://lms.upi.edu/
4.	Bogor Agricultural University	https://lms.ipb.ac.id/
5.	Syiah Kuala University	http://elearning.unsyiah.ac.id/
6.	University of Brawijaya	http://vlm.ub.ac.id/
7.	Andalas University	http://ilearn.unand.ac.id/
8.	Bandung Technological University	https://kuliah.itb.ac.id/portal/
9.	Malikussaleh University	http://elearning.unimal.ac.id/
10	Hasanuddin University	http://lms.unhas.ac.id

tries to encourage lecturers in Indonesia to develop creative learning methods by integrating various media technologies into conventional learning.

CONCLUSION

Technology has played an important role in higher education in the 21st century and will continue to play a greater role in the future at all levels and educational disciplines. Therefore, higher education institutions in Indonesia should continue to improve various learning support infrastructures such as the internet and other multimedia learning. Hopefully, lecturers in Indonesia should utilize the use of technology as a media to improve students' skills in science and technology and innovation. This is in line with the vision of Ministry of Research, Technology and Higher Education "The realization of high-quality education and the ability of science and technology and innovation to support the competitiveness of the nation".

Blended learning is a learning method that supports the use of technology in face-to-face conventional learning. The birth of this method aims to perfect the shortcomings of conventional *face-to-face* learning methods that do not use the technology in learning, as well as the lack of *e-learning* methods that ignore *face-to-face* learning. In this method, students learn face-to-face in the classroom supported by various learning media such as Website, online video or *Learning Management System* (LMS). In practice, the use of technology is actually more widely used for learning outside the classroom, especially for online discussion and collecting tasks. This method emphasizes that learning does not only happen in the classroom face-to-face but also outside the class through online media.

Various learning topics can also be learned independently outside the classroom without having to al-

ways depend on the teacher in the classroom. This learning method is very relevant to be implemented in Indonesian higher education to support students to learn independently outside the classroom, build the ability to discuss and collaborate with *their peer* (*peer-interaction*) to solve problems. This paper encourages teachers at Indonesian higher education to apply *Blended* learning methods in teaching and learning, as well as the use of various learning media such as Web, LMS, Blog, Wiki, Social media, and video. Using this method, it will transform the classical teaching methods or traditional teacher-centered learning to student-centered learning innovation.

The author hopes that this article can at least give a contribution to the potential development of Hybrid learning methods in Indonesia. As a recommendation, Ministry of Research, Technology and Higher Education as a policymaker of higher education in Indonesia should recommend the Blended-Learning method as a contemporary method that must be adopted by various higher education in Indonesia in teaching and learning activities. In some advanced countries, Blended learning has been transformed into a more measurable and structured learning model called Flipped learning or flipped classroom learning, where students learn to master the material at home and come to class to discuss problem-solving (Zainuddin & Halili, 2016).

This article certainly has a lot of limitations since it only provides a brief description of the concept (conceptual paper) and does not have a strong empirical foundation to the implementation Blended learning in Indonesia. The empirical study on the implementation of the blended learning is also very less done in Indonesia. Therefore, the authors hope that there are Indonesian educational researchers to conduct an empirical study of the implementation of Blended learning methods both at colleges and schools.

REFERENCES

- Adiwaluyo, E. (2013, April 29). Banda Aceh: Antara Warung Kopi dan Internet Gratis. Retrieved August 24, 2015, from <http://marketeers.com/article/bandaaceh-antara-warung-kopi-dan-internet-gratis.html>.
- Asfar, N., & Zainuddin, Z. (2015). Secondary students' perceptions of information, communication, and technology (ICT) use in promoting self-directed learning in Malaysia. *The Online Journal of Distance Education and E-Learning*, 3(4), 67–82.
- Bristol, T. (2014). Flipping the classroom. *Teaching and Learning in Nursing*, 9(1), 43–46.
- Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education*, 47(1), 1–32.
- Dalsgaard, C., & Godsk, M. (2007). Transforming traditional lectures into problem-based *Blended learning*: challenges and experiences. *Open Learning*, 22(1), 29–42.
- Firmansyah, E. O., & Nugrahandika, W. H. (2014). *Pemanfaatan Warung Kopi Sebagai Ruang Publik Di Kota Banda Aceh* (Unpublished doctoral dissertation). Universitas Gadjah Mada, Yogyakarta.
- Fisher, D. (2009). The use of instructional time in the typical high school classroom. *The Educational Forum*, 73(2), 168–176.
- Freeman, S., O'Connor, E., Parks, J. W., Cunningham, M., Hurley, D., Haak, D., ... & Wenderoth, M. P. (2007). Prescribed active learning increases performance in introductory biology. *CBE-Life Sciences Education*, 6(2), 132–139.
- Fu, J. S. (2013). ICT in Education: A Critical Literature Review and Its Implications. *International Journal of Education & Development using Information & Communication Technology*, 9(1), 112–125.
- Garcia, E., Brown, M., & Elbeltagi, I. (2012). The Changing Roles of Staff and Student within a Connectivist Educational Blog Model. *Proceedings of the 11th European Conference on E-Learning*, 165.
- Gebre, E., Saroyan, A., & Bracewell, R. (2014). Students' engagement in technology-rich classrooms and its relationship to professors' conceptions of effective teaching. *British Journal of Educational Technology*, 45(1), 83–96.
- Graham, C. R., Henrie, C. R., & Gibbons, A. S. (2014). Developing models and theory for *Blended learning* research. In A. G. Picciano, C. D. Dziuban, & C. R. Graham (Eds.), *Blended learning: Research perspectives*, volume 2 (pp. 13–33). New York, NY: Routledge.
- Güzer, B., & Caner, H. (2014). The past, present, and future of *Blended learning*: an in-depth analysis of literature. *Procedia-Social and Behavioral Sciences*, 116, 4596–4603.
- Halili, S. H., & Zainuddin, Z. (2015). Flipping the Classroom: What we know and what we don't. *The Online Journal of Distance Education and e Learning*, 3(1), 28–35.
- Halili, S. H., Razak, R. A., & Zainuddin, Z. (2015, December). Exploring the use of 'Wiggio' to support online collaborative learning for adult learners. In *Economics, Social Sciences and Information Management: Proceedings of the 2015 International Congress on Economics, Social Sciences and Information Management (ICESSIM 2015)*, 28–29 March 2015, Bali, Indonesia (p. 15). CRC Press.
- Hwang, G. J., & Chen, C. H. (2017). Influences of an inquiry based ubiquitous gaming design on students' learning achievements, motivation, behavioral patterns, and tendency towards critical thinking and problem-solving. *British Journal of Educational Technology*, 48(4), 950–971.
- Kanuka, H., & Anderson, T. (2007). Online social interchange, discord, and knowledge construction. *International Journal of E-learning & Distance Education*, 13(1), 57–74.
- Krasnova, T., & Demeshko, M. (2015). Tutor-mediated support in Blended learning. *Procedia-social and behavioral sciences*, 166, 404–408.
- Kuo, Y. C., Belland, B. R., Schroder, K. E., & Walker, A. E. (2014). K-12 teachers' perceptions of and their satisfaction with interaction type in *Blended learning* environments. *Distance Education*, 35(3), 360–381.
- Majumdar, S. (2012). Web 2.0 tools in Library Web Pages: Survey of universities and institutes of the national importance of West Bengal. *DESIDOC Journal of Library & Information Technology*, 32(2), 167–170.
- McLaughlin, J. E., Griffin, L. M., Esserman, D. A., Davidson, C. A., Glatt, D. M., Roth, M. T., ... & Mumper, R. J. (2013). Pharmacy student engagement, performance, and perception in a flipped satellite classroom. *American Journal of Pharmaceutical Education*, 77(9), 1–8.
- Missildine, K., Fountain, R., Summers, L., & Gosselin, K. (2013). Flipping the classroom to improve student performance and satisfaction. *Journal of Nursing Education*, 52(10), 597–599.
- Mortera-Gutiérrez, F. (2006). Faculty best practices using *Blended learning* in learning and face-to-face instruction. *International Journal on E-learning*, 5(3), 313–337.
- Nguyen, T. C. (2010). Challenges of learning English in Australia towards students coming from selected Southeast Asian countries: Vietnam, Thailand, and

- Indonesia. *International Education Studies*, 4(1), 13–20.
- O'Connor, C., Mortimer, D., & Bond, S. (2011). *Blended learning: Issues, benefits, and challenges. International Journal of Employment Studies*, 19(2), 63–83.
- Oliver, K., & Stallings, D. (2014). Preparing teachers for emerging Blended learning environments. *Journal of Technology and Teacher Education*, 22(1), 57–81.
- Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30(3), 227–238.
- Poon, J. (2014). A cross-country comparison on the use of Blended learning in property education. *Property Management*, 32(2), 154–175.
- Porter, W. W., Graham, C. R., Spring, K. A., & Welch, K. R. (2014). *Blended learning in higher education: Institutional adoption and implementation. Computers & Education*, 75, 185–195.
- Richter, T., & McPherson, M. (2012). Open educational resources: education for the world? *Distance Education*, 33(2), 201–219.
- Schmidt, S. M., & Ralph, D. L. (2014). The Flipped Classroom: A Twist On Teaching. In *The Clute Institute International Academic Conference, San Antonio, Texas, USA* (pp. 98–104).
- Staker, H., & Horn, M. B. (2012). *Classifying K-12 Blended learning*. Innosight Institute.
- Sugiharto, B. (2016, January). The profile of the Utilization of Information and Communication Technology and Its Potency for *Blended learning* Development in Biology Education Department of Teacher Training and Education Faculty of UNS. *Proceeding Biology Education Conference: Biology, Science, Environmental, and Learning* (Vol. 12, No. 1, pp. 611–617).
- Sun, P. C., Tsai, R. J., Finger, G., Chen, Y. Y., & Yeh, D. (2008). What drives a successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, 50(4), 1183–1202.
- Wang, S., & Heffernan, N. (2010). Ethical issues in Computer-Assisted Language Learning: Perceptions of teachers and learners. *British Journal of Educational Technology*, 41(5), 796–813.
- Woo, K., Gosper, M., McNeill, M., Preston, G., Green, D., & Phillips, R. (2008). Web-based lecture technologies: blurring the boundaries between face-to-face and distance learning. *Research in Learning Technology*, 16(2), 81–93.
- Zainuddin, Z. (2015). Exploring the Potential of *Blended learning* and *Learning Management Systems* (LMS) for Higher Education in Aceh. *English Journal*, 2(2), 70–85.
- Zainuddin, Z. (2017). First-Year College Students' Experiences in the EFL Flipped Classroom: A Case Study in Indonesia. *International Journal of Instruction*, 10(1), 133–150.
- Zainuddin, Z., & M. Attaran. 2015. "Malaysian Students' Perceptions of Flipped Classroom: A Case Study." *Innovations in Education and Teaching International*, 53(6), 660–670.
- Zainuddin, Z., & S. H. Halili. 2016. "Flipped Classroom Research and Trends from Different Fields of Study." *The International Review of Research in Open and Distributed Learning IRRODL*, 17(3), 313–340.