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Readiness for *Blended Learning* viewed from the Students' Attitude towards Learning Aspects

Hanita Yulia✉

Faculty of Information and Technology, Satya Wacana Christian University, Indonesia

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Abstract

Blended Learning combines the advantages of online learning and conventional classroom. However, merely combining online learning and conventional classroom might not fulfill students' need, and could lead to unexpected failure. Therefore, it is necessary to know the students' readiness, which is a prerequisite for the successful implementation of this learning model. This is a qualitative and quantitative descriptive research, aims to describe the students' readiness for Blended Learning implementation, viewed from the students' attitude towards learning aspects in Blended Learning. The questionnaires were distributed to 108 students of the Faculty of Information and Technology to know the use of technology, internet access, online activities, and the students' attitude toward learning aspects. In-depth interviews to the students were conducted to know deeper on the students' attitude toward the learning aspects in BL. The findings show that the students were very ready for the implementation of Blended Learning. It can be seen from students' positive atitude toward online aspects (learning flexibility, online learning, online interaction, and study management), as much as 83%, higher that the score of their attitude toward conventional classroom learning which is 77%. The students'readiness is a foundation for the successful implementation of Blended Learning, which should be supported by both lecturers and organization.

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✉ Address correspondence:
Jl. Diponegoro 52 – 60, Salatiga 50711
E-mail: hanita.yulia@staff.uksw.edu

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INTRODUCTION

The success of learning process is measured in some ways. One of them is through the expected learning outcome. An innovative learning model that can provide meaningful learning experiences which is more than just getting the knowledge of the teacher, is needed to achieve the expected learning outcome. Currently, Blended Learning model, called BL in this study, is popular and accepted as a way of teaching and learning in Higher Education (Guangzhi and Lunjin, 2012). This model combines classroom learning and technology-based learning.

In the 21st century education, technology-based learning either synchronous or asynchronous allows teachers to have a variety of innovative ways to deliver content and learning activities to students (Tseng and Walsh, 2016). Several studies have found that online learning is proven to provide creative teaching which is appropriate to the abilities and learning styles of each individual, as well as involving students in active learning with a variety of interactive source materials (Cho and Cho, 2014; Sydnor et al, 2014). On the other hand, creative and innovative classroom or face to face learning environment is also important. Social perspective such as the level of human relationships, social interaction and spontaneous comments can't be obtained in online learning environment (Bonk & Graham, 2006; Woo and Reeves, 2007).

Both online and face to face learning have their own advantages and can be complementary when combined into a blended learning model. Harris et al (2009) adds that BL is a methodology of effective resources with the potential to support teaching and enrich students' learning experience. Some studies have also discovered the benefits of blended learning. BL is useful in making learning more meaningful for both individual and social level (Hew & Cheung, 2014; Prat-Corominas et al in Trujillo et al, 2016). For Higher Education in particular, BL enables the transformation of education approach, the creation of knowledge in collaboration with colleagues and understanding of how to use information in a particular context (Marquez and Jimenez-Rodrigo, 2014).

Some previous studies mostly focus on the positive influence or advantages of BL model. On the other hand, Kilmurray (2003) stated that merely combining online and conventional learning in a blended learning model might not fulfill the students' need and could lead to unexpected failure. Therefore, it is important to ensure the readiness of some stakeholders for blended learning implementation. Harris et al (2009) highlighted the importance of perspective from multiple stakeholders such as organizations, teachers and students. Among these three, the students play the most vital role. Therefore, it is considered very important to asses the students' readiness to implement BL model completely (Park, 2009; Baldwin-Evans, 2006). The students' readiness is highly needed because in BL model they are demanded to be more independent and less dependence to the teachers. In this learning model, the students are demanded to make deliberate efforts aimed to plan, manage, and direct their learning activities and share learning responsibilities with their teachers (Tsai, 2010). In other words, the students' readiness is a prerequisite for the successful implementation of BL (Meng Tang and Yen Chaw, 2013).

One of the ways to assess the students' readiness for BL implementation is to see their attitudes toward different learning aspects in BL. It is because students' attitudes are linked to quality of learning (Sanprasert, 2010; Ituma, 2011). Tang Meng and Yen Chaw (2013) added that the students' attitude toward the six different aspects of learning (flexibility of learning, online learning, learning management, technology, online interaction and classroom learning) could affect their readiness for BL implementation. The students' readiness is an important

factor for the successful implementation of this learning model. Therefore, the research aims to describe the students' readiness for BL implementation viewed from their attitudes toward different aspects in BL learning (flexibility of learning, online learning, learning management, technology, online interaction and classroom learning). Knowing the students' readiness, it is expected that the teachers and organization can arrange effective strategy for the successful implementation of Blended Learning implementation.

Blended learning known as hybrid learning, has three definitions according to White Lock and Jelfs (2013), such as (1) a combination of conventional learning and online web based learning, (2) a combination of media and devices used to build e-learning, and (3) a combination of a pedagogic approach which is not affected by the use of technology. However, experts are generally more likely to agree that the core of the BL is a combination of the benefits gained from online learning environment and face-to-face learning in which involves the merging of media and learning methods in order to provide different and meaningful learning experience (Osguthorpe and Graham, 2003). Face to face learning environment provides more opportunities for social interaction that students need to guide them through learning. On the contrary, web-based learning environment provides the flexibility of time and place which is not possible in face-to-face learning. Furthermore, based on the proportion of online material, Allen et al (2007: 5) gives a clear category of learning on how learning is classified into BL. The categorization is illustrated in Table 1 below.

Table 1. Class Type Classification

Proportion of Online Materials	Class type	Description
0%		Class without the use of online technology. The learning material is delivered in oral and written.
1 – 29%	*Web Facilitated*	Class uses web-based technology to facilitate direct/traditional learning. The course uses Learning Management System (LMS) or web page to display syllabus or assignment.
30 – 79%	*Blended*	Class combines online and face-to-face learning. The substantial proprtion of the material is delivered online. Usually the class provides online discussion, but there is also several times face-to-cafe learning.
80+%	*Online*	Most of the material or all material is delivered onlihe and usually doesn't have face-to-face learning.

Source: Allen dkk, 2007.

Based on the table above, the class is said to apply BL if the portion of applying online learning ranges from 30% - 79% and combined with face-to-face learning. Meanwhile, there are some benefits from the application of BL. Poon (2013) mentions some benefits of BL such as high flexibility for both teachers and students, high autonomy, development of the skills needed for research and reflection, reduce of the average dropout, as well as reduce of the costs associated with learning materials. Garisson and Kanuka (2004) provides specific

benefits of blended learning in which face to face learning is included, such as the opportunity to build a sense of togetherness, cooperation and collaboration among the students will be real when they finally meet on face to face learning to have open dialogue, experience critical debate and participate in various open communication safely.

Wasoh (2014) in his research adds some reasons why teachers apply BL for blended learning is proven to increase communication which is usually limited in the classroom, improve learning to be more interesting because students are not easily get bored, creating a student-centered learning environment because they find information in learning themselves, more flexible time and place of learning, and improve access to learning materials. Sharpe et al (2006) describes three ways BL may be adopted in higher education learning. First, learning materials are available online via the LMS (Learning Management System) to equip traditional learning activity. Second, digital technologies and science education has just been introduced to students for radical learning experience. The third is the use of digital technologies by students.

Park (2009) states that it is essential for higher education learning to understand the students' attitude to assess their readiness in the implementation of BL. In a study conducted by Meng Tang and Yen Chaw (2013) it was found that students' attitude towards five learning aspects (learning flexibility, online learning, learning management, technology and online interaction) have a positive influence on their adaptability to BL. And students' adaptability to BL has positive effect on student readiness to BL. It means the more positive their attitude towards these five aspects of learning, the better adaptability they have to BL and they are more ready for BL. However, in their study, the students' attitude toward technology is considered not to affect the students' adaptability toward BL as students nowadays are tech-savvy generation (generation of technological/digital literacy). On the other hand, there is a negative correlation between students' attitude towards face-to-face /classroom learning and their readiness to implement BL. Furthermore, the correlation between students' attitude toward learning aspects and the students' adaptability toward blended learning as well as their readiness to implement blended learning can be depicted in the following figure.

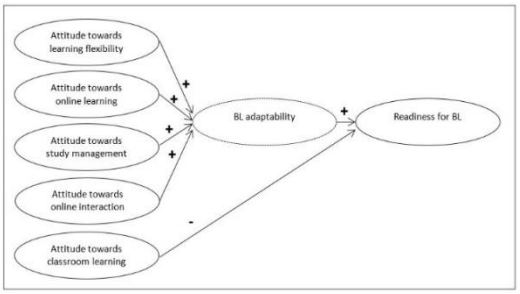

Figure 1. Students' Atitude toward Learning Aspcts, Students' Adaptibility toward BL, and Students' Readiness for BL Model (adapted from Meng Tang and Yen Chaw, 2013)

Learning flexibility, the first aspect, allows students to balance their academic, work and family life regarding their various responsibilities (Vaughan, 2007). BL makes learning more effective and efficient. The second aspect is online learning that meets the needs of introvert students and those who are not comfortable to share opinion and ideas in public directly (Howard, 2009). The third aspect is the students' learning management which is self-regulated learning process in which students make deliberate efforts aimed to plan, manage, and direct the learning activities as good as possible to share learning responsibility with their

teachers (Tsai, 2010). The fourth aspect is technology that will remain examined in this study to see whether some technological barriers in form of internet access and online activities are faced by the students. ICT is the main key in the BL. Easy access and good familiarity of the students towards digital technology is a prerequisite of success on BL implementation (Harris et al, 2009). The fifth aspect is the online interaction where interaction and discussion is an important aspect of learning and should be included in the BL. Face-to-face/classroom learning is the sixth aspect which provides real and meaningful interactions, which does not exist in online learning. Students who have great desire for face-to-face learning has a greater possibility to withdraw from online learning (Harris et al, 2009). In conclusion, the students are said to be ready for blended learning as long as the score of their attitude towards classroom learning is not more than the score of their attitude towards those five online aspects in blended learning.

METHODS

This research is conducted in the Faculty of Information and Technology, Satya Wacana Christian University. The course of Sistem Basis Data (SBD) is chosen as a sample as it has utilized LMS, *iLearning Oracle,* as one of the examples of online learning, so that the students' attitude toward both classroom and online learning can be seen, and their readiness for BL implementation can be seen as well. This is a decriptive research which attempts to combine qualitative and quantitative research. Questionnaires were distributed to 108 students taking Sistem Basis Data course was conducted to know the students' use of technology, access to technology, and their online activities, as well as students' attitudes toward some aspects of learning that demonstrates their adaptibility toward BL on the learning process.

The first part of the questionnaire contains technological use that consists of a yes/no answer to get data on the technological tools that the students have. The second part is about the Internet access that they have, to see whether there is any obstacle to the internet access. The third part is about online activities of the students to determine if they are adequately familiar with some online activities. The three parts above determine whether or not there is any obstacle on technology aspect. If any obstacle is not found, then the technology aspect will not be included in the fourth part of the questionnaire. The fourth part is a questionnaire of the students' attitudes toward learning aspects, using a Likert scale with responses such as 1) strongly disagree, 2) disagree, 3) neutral, 4) agree and 5) strongly agree. Data processing is conducted in a simple quantitative approach, using the Microsof Excel 2013, which is tabulated and calculated in percentages. The data analysis in percentage is used to determine the students' attitudes toward the learning aspects. The qualification standard on students' attitudes used in this study is presented in Table 2 below.

Table 2. The Qualification Standard on Students' Attitude toward Learning Aspects

Score (%)	Point	Qualification
80 – 100	5	Strongly Agree/Very Positive
60 – 79.99	4	Agree/Positive
40 – 59.99	3	Neutral
20 – 39.99	2	Disagree/ Negative
0 – 19.99	1	Strongly Disagree/Very Negative

An interview to five students has been conducted to know deeper on the students' attitude toward learning aspects and to have them explained the reasons why they have such an attitude. The interview to lecturers has also been done to get a description on the learning process in SBD class, which uses both classroom and online learning. The data validation is done using triangulation of data collection techniques, by comparing the questionnaires collected and the interview results. In addition, there is triangulation of sources, not only the students but also lecturers are chosen to be the data sources. Thus, the actual readiness of the students can be seen.

RESULTS AND DISCUSSION

Based on the survey to 108 students taking SBD course, it was found that 97% of 108 students have smartphone, 20% have tablet, 20% have netbook, 73% have notebook and 47% have a desktop computer. From these data, it can be seen that the ownership of technology devices of the students is at most smartphones and notebooks while the least is tablet and netbook. Furthermore, from 108 students, there are 71% of students who have more than 1 Mbps internet subscription access. This means that more than half of the participants have easy and adequate internet access. The students' online activities can be presented in Table 3 below.

Table 3. Students' Online Activities

Online Activities		Online Activities	
Send email	94%	Download mobile application from App Store (ex: Android Market, Apple App Store)	92%
Browse social/network media (such as Facebook)	94%	Watch video streaming (mis. You Tube)	95%
Read online news (detik.com)	74%	Listen to audio streaming (ex: radio program)	61%
Access e-database (Emerald, Proquest, Ebsco)	16%	Search information (ex: Google)	100%
Download/exchange file from/with P2P	67%	Access Learning Management System (iLearning)	89%
Shop online	60%	Send messages	94%
Browse websites	95%	Play online game	81%
Do online banking (ex: checking account)	32%	Others	66%

From the data, it can be seen that almost all the students, which is 94% send email. However, based on observations, it was found that all students (100%) has ever sent email. This is because they are required by lecturers of almost all subjects in FTI (the Faculty of Information and Technology) to submit the given tasks via email. Almost all of the students (94%) visit social networking sites such as Facebook, which can be used as a means of online communication. Based on the interview to the students, it was found that indeed there are students who do not have a facebook account and if they have it, they tend to be inactive or rarely open that account. It was also found that 74% of students read online news. Some

online news sites they usually read is such as *detik.com* and *okezone.com*. It was also found that only 16% of students have access to an e-database. This is due to lack of knowledge and references to e-database by most of the students. In addition, teachers are also less to socialize it. Downloading and exchanging files from and with P2P are performed by 67% of 108 students. There are 60% of students who also shop online. There are almost all students, as many as 95% of the students, browse websites. They visit various websites both educational and non-educational sites.

In connection with smartphone ownership by 97% of the students or nearly all of the students, it was also found that there are 92% of those who have downloaded mobile application from the Appstore. Furthermore, it was found that 95% of the students watch video streaming and 61% listen to audio streaming. The website they regularly visit to watch video streaming is *youtube.com*. From the questionnaires, it was found that 100% or all of the students stated they had ever searched or often search for online information. The information they search is mostly related to their course assignments. Google is the search engine that the students often use to search for online information.

From 108 students, there are 89% who said that they had accessed LMS. On the contrary, based on the observation, in fact all of the students had done it. This is because SBD course uses Oracle iLearning, one of the LMS forms provided by Oracle, even though not all functions in LMS is utilized in the learning process. However, many of the students do not understand about the term LMS. As many as 94% of 108 students said they send messages online through social media or instant messaging and 81% play online games in their leisure time. There are 66% of students perform other online activities which are not included in the activities mentioned above. From the results data from the first three parts of the questionnaire, it can be concluded that there is no technological barriers such as the use of technology, internet access, and online activities. Therefore, students' attitude toward technology is not included in the fourth part of the questionnaire, which is about the students' attitude toward learning aspects, for the research subjects are students in the category of tech-savvy (technological literacy).

To know the students' readiness for BL implementation, a questionnaire to determine the students' attitudes toward learning aspects has been distributed to obtain information about their adaptability to BL. The results of the questionnaires on students' attitudes toward learning aspects is presented in Table 4 below.

Table 4. The Students' Attitude toward Learning Aspects

Learning Aspects	Statement	Score (%)	Average Score per Aspect (%)	Average Score per Category (%)
Classroom Learning	Learning in direct collaboration/ face-to-fce with other students is more effective	81.6	77	77 (positive)
	I learn better through class based activities which is teacher centered (lecture)	67.5		
	I learn better when someone guides me personally	81.8		
Online Learning	I feel comfortable to use website technology to share knowledge with others	82.9	84.9	83 (very

Learning Aspects	Statement	Score (%)	Average Score per Aspect (%)	Average Score per Category (%)
	I am certain that web is a useful platform for learning	85.7		positive)
	I am happy and respect my lecture for easy online access	86.2		
Learning Management	I can manage my time better at online learning	74.6		
	I can learn repeatedly through online learning	81.6	77.3	
	Online learning motivates me to prepare better	75.9		
	Online learning encourages me to make plans	77.2		
Learning Flexibility	I want to decide where to learn	84.2		
	I am happy to learn according to my own learning step and stages	84	84	
	I want to decide when to learn	84.4		
Online Interaction	Web technology is easy to use	87.5		
	I think online communication with others is easy	84.2	85.9	

Based on the questionnaire about the students' attitude toward some learning aspects, some results has been found. First, the attitude of the students towards face-to-face/classroom learning is 77% in the positive category. From 108 students, there were 81.6% who strongly agreed/very positive with the statement that the direct collaboration with other students is more effective. From the interviews, some students stated that they prefer to meet face to face with other students when they have to do group work for example. However, there are some students who expressed their difficulty of direct meetings due to their busy time on different course schedule and other activities. There are 67.5% of students who agreed that they learn better through classroom-based activities which is teacher centered using lecture method. However, in the interviews, some students said they would get bored and sometimes do not understand when teachers only use the lecture method in presenting the material. Moreover, the material that teachers convey is the same material found in iLearning Oracle. Some teachers even use the same slides in English, similar to that on the iLearning. Actually they expect the teacher can use a more varied method. From 108 students, there were 81.8% who strongly agreed that they can learn better when there is someone to guide them personally. In Sistem Basis Data class, there is a teaching assistant who would help students who have difficulty. It is considered to be very beneficial for the students.

Secondly, related to online learning, there are 84.9% of the students who expressed a very positive attitude towards this aspect. There are 82.9% of students felt very comfortable in using web technologies to exchange knowledge with others. This is because they are students of Information and Technology Faculty, who are already familiar with web technologies. In

addition, 85.7% of them are very certain that website is a useful platform for learning and 86.2% were very pleased and appreciative their lecturers for easy online access. Third, 77.3% of 108 students expressed a positive attitude toward learning management aspects. There are 74.6% of the students agreed that they can manage time better when they learn online, 81.6% of students strongly agreed that they can learn repeatedly when they learn online, 75.9% of the students agreed that online learning motivates them to prepare learning better, and 77.2% students agreed that online learning encourages them to make plans.

Fourth, students' attitudes toward learning flexibility aspect is very positive, such as 84%. Most of them strongly agreed that they wanted to decide for themselves where to learn, happy at learning in accordance to their own learning steps and stages, and wanted to decide themselves on when they would learn. Fifth, the students also showed a very positive attitude with a value of 85.9%. Students stated that they strongly agreed, with a value of 87.5% and 84.2%, that web technologies are easy to use and online communication with others is easy. The students' attitude toward the five learning aspects affects their adaptability and readiness toward blended learning model. The results of each of these aspects can be shown in Figure 2 below.

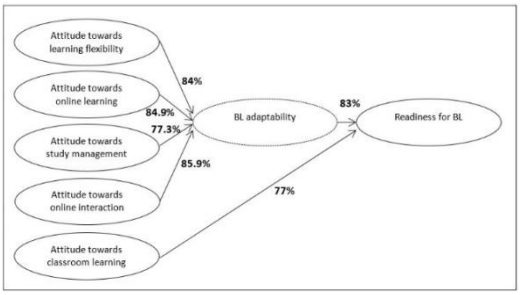

Figure 2. Score of the Students' Attitude toward Learning Aspects, Students' Adaptability to BL as well as their Readiness for BL

It can be seen from Figure 2 above that the attitude of the students toward learning flexibility, online learning, learning management and online interactions ranged from positive to very positive. The highest score is the aspects of online interaction that is equal to 85.9%. On the contrary, the lowest score found in the management aspects of learning that is equal to 77.3%. This score is still included in the positive category. This means that students can reasonably manage their online learning. On the other hand, it was found that the students' attitude toward classroom/face-to-face learning achieved a score of 77%. This value is included in the positive category. However, this value is still lower than the value of students' attitudes toward online learning. Therefore, it can be concluded that the students' attitude towards online learning is very positive with a value of 83% and their attitude towards classroom learning is positive with a score of 77%. In other words, the adaptability of the students toward BL is very good so that the students are very ready for BL model implementation.

The study states that most students in SBD class have a smartphone (97%) and notebooks (73%). This means that almost all of the students have the necessary technological devices when they are required to attend an online learning. In addition, there are 71% of 108 students of SBD class that has internet access more than 1 Mbps. This shows that the internet access as one of the necessary equipments to implement online learning in BL is not a barrier for students. The research results also shows that students are familiar with online activities, especially emailing (94%), visiting social network such as Facebook (94%), browsing websites (95%), downloading mobile applications (92%), searching online information (100%), access

the LMS (89%), and send messages (94%). The online activities will often be done in implementing the BL. Students are quiet familiar with these activities and did not experience obstacles in the technological aspects of one of them because they are classified as tech-savvy generation (technological literacy) as submitted by Meng Tang and Yen Chaw (2013) so that the students' attitude toward technology is not included in the fourth questionnaire.

Although SBD students in general are very familiar with online activities, particularly those which are needed in the application of BL, unfortunately there are only 16% of 108 students who have accessed an e-database as a support in online learning. It is caused by lack of knowledge and reference of e-database in which the interview result found that teachers are also less to socialize it to students. Therefore, teachers should further promote and encourage the use of e-database and provide references of e-database to support learning. From the research results on the use of technology, internet access and online activities of the students, it can be said that the students did not find significant barriers of technological aspects. Therefore, from technological aspect, the students are ready to implement BL. This is in line with those expressed by Haris et al (2009) regarding of ICT as the main key element in BL, the easy access and good familiarity of students toward digital technology becomes a prerequisite for successful implementation of BL.

The research results on students' attitudes toward learning aspect showed that overall the students have a very positive attitude towards aspects of online learning, learning management, learning flexibility, and online interactions with an average score of 83%. The attitude of the students is very influential on their adaptability to the BL. This shows that the students are very ready to implement BL when viewed from the adaptability of students to BL. This is in line with what was presented by Tan Meng and Yen Chaw (2013), that the more positive students' attitude towards the four aspects above, the better adaptability they have to BL and the more ready they are in the implementation of BL. On the other hand, students' attitude to classroom/face-to-face learning is included in the category of positive, such as 77%.

This shows that students still need and want a classroom/face-to-face learning. However, in the interview, they said that there are weaknesses in SBD classroom learning. Teachers simply use the lecture method which tends to make students feel bored. In addition, teachers also use slides in English exactly the same as it is in the iLearning Oracle. This makes the students who do not really understand the material through online learning were still have difficulties in understanding the material. Therefore, in face-to-face learning, which will remain in BL, teachers should be able to apply the variety of learning methods and creative ways to enhance the students' activity and understanding. This relates to the definition of BL given by White Lock and Jelfs (2013), BL is defined as a combination of online and face-to-face learning and a combination of media and devices for building e-learning, BL is also defined as a combination of pedagogical approaches which is not affected by the use of technology.

Student attitudes towards face-to-face learning that negatively related to their readiness for BL implementation classified as positive in the amount of 77%. When the students have more positive attitude towards face to face learning, the more they are not ready to implement BL (Tang Meng and Yen Chaw, 2013). However, this is not a problem because the students' attitude toward online learning is higher or more positive. In addition, viewed from the proportion of online learning material, BL has 30-79% proportion of online learning (Allen et al, 2007: 5) so that the positive attitude the students have towards face-to-face learning can still support the implementation of BL as long as the teacher makes a combination of creative and innovative learning methods.

CONCLUSION

From the research result, it can be concluded that the students were entirely ready for the implementation of *Blended Learning* if seen from their attitude toward online learning aspects, which is higher than their attitude toward conventional classroom learning. Besides, there was no obstacle in technology aspect, which means that there is students' readiness for BL implementation. Referring to the findings, further research may focus on the organization's readiness as well as teachers' readiness for BL implementation, and the development of BL learning design with the use of creative and innovative learning method to improve the students' understanding in the Faculty of Information and Technology, particularly in SBD class.

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