BUILDING STUDENTS' DIGITAL LITERACY SKILL THROUGH WEBLOG-LIBRARY CENTER APPROACH

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ABSTRACT: In connection with today's digitalization era, the integration of ICT into English literacy learning needs more concern from educators. Teachers are encouraged to explore the use of ICT and develop students' digital literacy skill as well. This study used weblog-library center as one of alternative to use in literacy learning. This study involved forty students of the eleventh grade divided into experimental and control group. Both groups were given digital literacy questionnaire in the beginning and at the end of the study covering four digital literacy components; basic ICT skills, information sources, digital competencies, and attitude and perspective toward digital usage and digital transformation. In addition, observation was conducted in experimental group to obtain clear information about students' digital literacy progress. The questionnaire was analyzed by using paired and independent sample t-tests. Meanwhile, observation results were calculated using percentage analysis. The results indicate that weblog-library center could improve students' digital literacy not only as the students perceived, but also as the teacher percieved. The experimental students could use digital tool properly and appropriately so that their ICT skill developed, the knowledge about getting information sources increased, digital competence enhanced and attitude and perspective about digital usage and transformation were positive.

***Keywords**: digital literacy, weblog-library center, ICT.*

MEMBANGUN KETERAMPILAN LITERASI DIGITAL SISWA MELALUI PENDEKATAN *WEBLOG-LIBRARY CENTER*

ABSTRAK: Sehubungan dengan era digitalisasi saat ini, pengintegrasian TIK ke dalam pembelajaran literasi bahasa Inggris membutuhkan perhatian lebih dari pendidik. Guru didorong untuk mengeksplorasi penggunaan TIK dan mengembangkan keterampilan literasi digital siswa. Penelitian ini menggunakan *weblog-library center* sebagai salah satu alternatif untuk digunakan dalam pembelajaran literasi. Penelitian ini melibatkan empat puluh siswa dari kelas sebelas yang dibagi menjadi kelompok eksperimen dan kontrol. Kedua kelompok diberi kuesioner literasi digital di awal dan di akhir studi yang mencakup empat komponen literasi digital; keterampilan TIK dasar, sumber informasi, kompetensi digital, dan sikap dan perspektif terhadap penggunaan digital dan transformasi digital. Selain itu, observasi dilakukan dalam kelompok eksperimen untuk mendapatkan informasi yang jelas tentang kemajuan literasi digital siswa. Kuesioner dianalisis dengan menggunakan uji-t berpasangan dan independen. Sementara itu, hasil observasi dihitung menggunakan analisis persentase. Hasil penelitian menunjukkan bahwa *weblog-library center* dapat meningkatkan literasi digital siswa tidak hanya seperti yang dirasakan siswa, tetapi juga dari persepsi guru. Siswa dalam kelompok eksperimen dapat menggunakan alat digital dengan benar dan tepat sehingga keterampilan TIK mereka berkembang, pengetahuan tentang mendapatkan sumber informasi bertambah, kompetensi digital meningkat serta sikap dan perspektif tentang penggunaan dan transformasi digital adalah positif.

***Kata Kunci**: literasi digital, weblog-library center, TIK.*

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INTRODUCTION

Students must have the ownership of English literacy at least for their own level of education. They are very much encouraged to be proficient in English since proficient English students can have better academic performance. Accordingly, Wilson and Komba (2012) find out that there was a positive relationship between English language proficiency and academic performance.

Dealing with the evolving definitions of literacy and its other related sub-terms, EFL students are required to activate and upgrade their English literacy skill. The focus of literacy is not only on the ability to read and write but also on the expanding set of knowledge, skills and strategies which individuals build on throughout life in various situations, and through interaction with their peers and with the larger communities in which they participate (OECD, 2003, p.103). Furthermore, the new literacies of the 21st century involves technology literate. In other words, technology proficiency has been demanded in today's literacy learning.

In connection with this situation, Act No. 14 year 2005 about teacher and lecturer mentions that every teacher should be able to take advantage of ICT for the purpose of education. Furthermore, Indonesian young people age 12-35 are categorized as digital natives in which they are grown up in computerized environment so that they are familiar with the information and digital data as well as inter-connected in a system or network (Asosiasi Penyelenggara Jasa Internet Indonesia / APJII, 2012). This condition should be seen as an opportunity to encourage students to exploit technology use for educational purposes.

However, some studies report that English literacy skill especially for Indonesian students still remains problems. A study conducted by Diem (2011) reveals that the mean score of students' English literacy in Palembang was still below the standard score. Specifically, English reading literacy of Indonesian students are still far from the expectation of the curriculum standard for higher education (Hamra & Syatriana, 2012). Lack of exposure to English is one of the factors contributing to students' poor ability in English. Meanwhile, today's digital information era insists students not only to have

proficient English skill but also to possess digital literacy skill.

The concept of digital literacy was introduced by Gilster in 1997. Gilster (1997) defines digital literacy as the ability to understand and use information in multiple formats presented via computers. This skill is expected to optimize students' learning process and supposed to be the basis in getting useful information related to students' learning needs. Furthermore, digital literacy skill refers to the ability in getting, using, evaluating, communicating, creating and developing digital information through digital actions as the solution for some tasks. Adapted from Bawden (2008) and Martin (2008), the components of digital literacy skill cover basic ICT skill (underpinning/technical skill), information literacy skill (background knowledge), digital competencies (central competence), and attitude and perspective toward digital usages and digital transformation.

Focusing on digital literacy integrated into EFL learning, this study used an approach named "Weblog-Library Center." This approach explores the use of weblog in which some reading materials taken from free educational websites can be easily linked to students by embedding them on weblog post. Students participate in the learning process by posting and commenting on it. In this approach, reading materials embedded on the weblog are functioned as digital library. In line with Act No. 43 year 2007 about library, it defines library as a collection of all the information in the form of paper, printed paper, and/or recorded works in various media that have educational value, compiled, processed, and administered. Additionally, the activity is conducted with teacher's guidance in order not to make technology misuse during learning process. Nevertheless, the availability of technology-based facilities and the ability of ICT skill should be considered before implementing weblog-library center approach.

Meanwhile, weblog was effective for the development of English literacy that can cultivate learning motivation and opportunities for authorship (writing) and readership (reading) practice (Fageeh, 2011). Additionally, Huffaker (2004) explains that learners can gather in one site of weblog site where ideas are shared, questions are asked and answered, and social cohesion is developed. Those activities create collaborative learning among students.

Moreover, a case study conducted by Jun and Pow (2011) find out that web-based learning was useful in involving students in digital literacy practices.

Therefore, the explanation above underlies this study to investigate the use of weblog-library center approach in building students' digital literacy skill.

METHODOLOGY

This study used quasi-experimental design. There were two groups involved; experimental and control group. The students of experimental group got the treatment intensively by using weblog-library center approach for 20 meetings; each of which consisted of 2x45 minutes.

The population of this study was the eleventh-grade students in one of Senior High Schools in Palembang. The total number of the population was 344 students. In selecting the sample, this study used purposive sampling technique. Forty students were chosen as the sample because they were taught by the same English teacher and they had similar ability in English according to the results of English test given as the preliminary study. The students were divided into two groups (experiment and control groups) in which each group consisted of 20 students; 7 male students and 13 female students.

Before teaching and learning process was started, there were three things that had been done: (1) Each student had made their own blog guided by the researcher, (2) researcher had created class blog, and (3) all students had followed class blog and all experimental students' blog. Those activities had to be done in order to make teaching and learning process run well.

Researcher herself served as the teacher during the treatment. The teaching and learning process of the experimental group was conducted in the classroom through following activities. ***For pre activities***; teacher introduced the topic of the meeting. Then, teacher asked students to visit class blog and read selected materials from the links embedded on class blog. ***For whilst activities,*** students read one post from class blog about certain topic in each meeting. Then, they browsed other sources related to the topic and posted one paragraph about the topic with group/peer/individually on their blog. After that, they gave comment on each other posts. ***For post activities***, students responded to the comment by editing or

revising their previous post and posted the revision in the comment column of class blog. At last, teacher and students had discussion about their works.

To collect the data, digital literacy questionnaire adapted from theories of digital literacy concept proposed by Bawden (2008) and Martin (2008) was used to measure students' digital literacy skill. The questionnaire was distributed to the sample at the beginning and at the end of the study. It consists of some statements in terms of likert-scale consisting of 4 choices of answers; (1) I don't understand this, (2) Improvement needed, (3) I feel confident, and (4) I feel very confident. The questionnaire covers four digital literacy components; basic ICT skills, information souces,digital competencies, attitude and perspective toward digital usage and digital transformation. Moreover, the questionnaire had been tried out to other students before it was given to the sample of this study. From 55 items, there were five invalid items. Therefore, the questionnaire used in this study consisted of 50 valid items with the reliability of Alpha Cronbach coefficient was 0.947.

In addition, to obtain clear information about the students' digital literacy progress, observation was done by the researcher herself during the intervention in experimental group. It was needed to report more specific information about daily progress in all components of digital literacy skill. Therefore, checklists used for observation guideline were same with digital literacy questionnaire items. To measure the improvement, researcher adapted the scoring rubric from survey monkey ICT skill self-assessment. Then, the results of observation from meeting 2 until 21 were calculated into three periods; period 1= meeting 2-8, period 2 = meeting 9-15, and period 3 = meeting 16-21.

In this study, the results of the questionnaire were calculated using scoring system ranged from 0 to 100. Then, they were categorized based on five levels of achievements **(**very good, good, average, poor, and very poor). Meanwhile, to measure the improvement of digital literacy through observation, the researcher adapted the scoring rubric from survey monkey ICT skill self-assessment. There were four categories: excellent (confident and need no support or training), good (workable knowledge, but need practice), poor (small amount of knowledge, but not confident,

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improvement needed), and failed (no knowledge of this area). At last, all obtained data from digital literacy questionnaire were analyzed using paired sample t-test and independent sample t-test.

In addition, to see whether observation done by the researcher herself was reliable or not, the results were analyzed by using Pearson correlation. The mean of the results from observation period 1-3 was correlated with the result of digital literacy posttest of experiment students. Furthermore, to see the observation results more detail, the data were calculated by using percentage analysis for each items in each period.

FINDING AND DISCUSSION

The Results of Descriptive Analysis

The scores of digital literacy questionnaire were categorized into 5 levels of achievement. The results of the experimental group in the pretest showed that there was no students in poor and very poor level, 20% of the students was in average level, 55% was in good level, and 25% was in very good level. Meanwhile, the students made progress in the posttest. There was 95% of the students in very good level, 5% in good level, and none of the students was in average, poor and very poor level. The result is presented in Table 1.

Table 1. Score Distribution of Digital Literacy in Experimental Group

CATEGORY	PRETEST		POSSTEST	
	FREQ	%	FREQ	%
very good	5	25	19	95
good	11	55	1	5
average	4	20	-	-
poor	-	-	-	-
very poor	-	-	-	-

In the prestest of control group, there was 25% of the students in very good level, 60% in good level, 15% in average level, and no student in poor and very poor level. For the posttest result, 35% of the students was in very good level, 65% was in good level, and none was in average, poor, and very poor level. The score distribution of digital literacy in control group can be seen in Table 2.

Table 2. Score Distribution of Digital Literacy in Control Group

CATEGORY	PRETEST		POSSTEST	
	FREQ	%	FREQ	%
very good	5	25	7	35
good	12	60	13	65
average	3	15	-	-
poor	-	-	-	-
very poor	-	-	-	-

The Results of Normality and Homogeneity Tests

Before conducting the statistical analysis, the data of the study were analyzed using normality and homogeneity tests. Shapiro-Wilk test was used to analyze the normality and Levene's test was applied to obtain homogeneity. For the data of Digital Literacy Qestionnaire, in experiment group, p-values of the normality tests were .674 for pretest and .228 for posttest. Then, in control group, p-values of the normality tests was .109 in the pretest and .138 in the posttest. For the result of Levene's tests, it was found out that p-values was .770 for pretest and .101 for posttest. Since all p-values from normality and homogeneity tests exceeded .05, it can be concluded that the data of digital literacy questionnaire both in pretest and posttest of experimental and control group were normal and homogeneous. The results are presented in Table 3.

Table 3. The Results of Normality and Homogeneity Test

Variable	Normality Shapiro-Wilk				Homo-geneity	
	Exp		Cont			
	Stat	Sig	Stat	Sig	Stat	Sig
DLQ Pretest	.966	.674	.922	.109	.087	.770
DLQ Posttest	.939	.228	.928	.138	2.824	.101

The Results of Paired and Independent Samples T-Tests

The results of total score and its components were analyzed using paired and independent sample t-test. They were considered had significant improvement within group when t-value was higher than 1.729 (df=19) with sig. value was lower than .05.

From the result paired sample t-test, it was found out that digital literacy of experiment group show significant improvement with t-value was 6.297 and sig. (2 tailed) was .000. It was different from control group which did not make significant improvement with t value was 0.499 and sig. (2 tailed) was .623. Meanwhile, all digital literacy components of the experiment group significantly improved since the t-value was higher than 1.729 and sig. value was lower than .05. In control group, there were no significant improvement for digital literacy components. The results can be seen in Table 4.

Table 4. The Results of Paired Sample T-Test

VARIABLE	EXP	CONT

	T-value	Sig.	T-value	Sig.
Digital Literacy	6.297	.000	0.499	.623
a. Basic ICT Skill	5.042	.000	0.499	.623
b. Info Sources	7.712	.000	0.271	.789
c. Digital Competence	5.879	.000	1.157	.262
d. Attitude & Perspective	5.051	.000	1.548	.138

Furthermore, there was significant difference in posttest result between experiment and control group if t-value was higher than 1.686 (df=38) with sig. value was lower than .05. the result of independent sample t-test showed that there was significant difference between experiment and control group in terms of the posttest result with t-obtained was 4.931 and sig. (2 tailed) was .000. Furthermore, all components of digital literacy show significant differences. The values of t-obtained and significance results can be seen in table 5.

Table 5. The Results of Independent Sample T-Test

VARIABLE	T-value	Sig. (2 tailed)
Digital Literacy	4.931	.000
a. Basic ICT Skill	5.098	.000
b. Information Sources	5.772	.000
c. Digital Competence	3.274	.002
d. Attitude & Perspective	2.619	.013

Correlation Analysis between Digital Literacy Questionnaire and Observation

Digital literacy improvement of experiment group was measured by using questionnaire and observation. To see whether the results from both instruments were significantly correlated, they were analyzed by using Pearson correlation. It was found that there was significant correlation between the result of digital literacy questionnaire in posttest of experiment group and the result of observation since the probability values of each components were lower than the alpha level of 0.01. The results were explained as follows: 1) r = .838 and p = .000 for digital literacy (total), 2) r = .567 and p = .009 for Basic ICT skill, 3) r = .838 and p = .000 for information sources, 4) r = .625 and p = .003 for digital competencies, and 5) r = .627 and p = .003 for attitude and perspective. Table 6 presents the results.

Table 6. Correlation Analysis between DLQ and Observation Results

CORRELATION	r-value	Sig. (2 tailed)
DLQ (Total)	.680**	0.001
a. Basic ICT Skill	.567**	0.009
b. Information Sources	.838**	0.000
c. Digital Comptence	.625**	0.003
d. Attitude & Perspective	.627**	0.003

**Correlation is significant at the 0.01 level (2-tailed)

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Observation Results

During the study, the students in experiment group were observed while they were doing digital learning practices. There were 4 components which were observed; 1) basic ICT skill, 2) information sources, 3) digital competencies, and 4) attitude and perspective. For basic ICT skill, it was observed while the students were operating their ICT tools (computer, laptop, cellular phone or tablet). Meanwhile, information sources and digital competencies were observed from the results of the students' work which were posted on the blog. Then, their attitude and perspective about digital learning were observed from the students' response to the given task.

As a whole, students made progress for all items of the four digital literacy components. It can be seen from excellent and good category which increased from observation 1 to observation 3.

At the beginning of the study, there was very small number of the students who were in excellent and failed category. Most of them were in good and poor category. In the middle of the process, failed and poor category decreased and vice versa good and excellent category increased. Then, at the end of the study, none of the students was in failed category anymore, only few students (5%-15%) in few items were in poor category, around 50% students in all components had good category, above 50% students in some items were in excellent category.

In addition, when the results were seen in detail, the highest progress made by students from observation results was in students' basic ICT skill then followed by digital competencies because the number of the students who were in excellent category was almost or closely above 50% for these two components. Though attitude and perspective and information sources also increased still they were not as high as other two components as there was only small number of the students who were in excellent category. Table 7 presents the summary of the observation results.

Table 7
Summary of Observation Results

DIGITAL LITERACY ASPECTS	OBSERVATION 1				OBSERVATION 2				OBSERVATION 3			
	Excellent	Good	Poor	Failed	Excellent	Good	Poor	Failed	Excellent	Good	Poor	Failed
1) *Basic ICT Skill*												
a. IT Skill	–	80%	20%	–	5%	95%	–	–	60%	40%	–	–
b. Internet Skill	–	65%	35%	–	10%	85%	5%	–	60%	40%	–	–
c. File Handling Skill	–	50%	45%	5%	–	60%	40%	–	–	95%	5%	–
d. Word Processing Skill	15%	50%	35%	–	35%	65%	–	–	90%	10%	–	–
e. Additional ICT Skill	–	10%	60%	30%	–	50%	40%	10%	30%	55%	15%	–
2) *Information Sources*	5%	20%	35%	40%	10%	30%	60%	–	25%	60%	15%	–
3) *Digital Competencies*												
a. Statement	15%	55%	25%	5%	15%	80%	5%	–	45%	55%	–	–
b. Identification	15%	35%	45%	5%	10%	85%	5%	–	55%	45%	–	–
c. Accession	25%	35%	40%	–	25%	65%	10%	–	70%	30%	–	–
d. Evaluation	5%	50%	45%	–	10%	80%	10%	–	45%	55%	–	–
e. Interpretation	30%	50%	30%	–	20%	75%	5%	–	70%	25%	5%	–
f. Organization	15%	35%	50%	–	10%	75%	15%	–	45%	55%	–	–
g. Synthesis	5%	45%	45%	5%	5%	75%	20%	–	30%	65%	5%	–
h. Creation	5%	40%	55%	–	5%	85%	5%	5%	40%	55%	5%	–
i. Communication	30%	40%	30%	–	30%	65%	5%	–	65%	35%	–	–
j. Dissemination	5%	40%	55%	–	5%	85%	10%	–	50%	45%	5%	–
k. Reflection	–	45%	55%	–	10%	85%	5%	–	30%	65%	5%	–
4) *Attitude & Perspective*												
a. Digital Usage	5%	45%	45%	5%	15%	60%	25%	–	40%	60%	–	–
b. Digital Transformation	–	40%	45%	15%	–	55%	45%	–	20%	75%	5%	–

Discussion

At the beginning of the study, students' digital literacy skill involved in this study were categorized good enough since they were already familiar with basic ICT devices such as mobile phone, computer, and internet. This finding is line with the report presented by APJJI (2012) that internet users in Indonesia are dominated (60%) by young people aged 12-35. Furthermore, giving instruction by integrating the use of ICT into learning to the students with digital literacy skill is really effective to optimize teaching and learning process. However, teachers' guidance cannot be neglected even though students can learn more independently. Teachers need to direct students to use the tools properly and appropriately in order to avoid technology misuse during teaching and learning process.

The result from the questionnaire and observation show that digital literacy skill of experimental students was significantly improved. It means that weblog-library center was successful in improving students' digital literacy not only as the students perceived, but also as the teacher percieved. The experiment students could use digital tools properly and appropriately so that their ICT skill developed, the knowledge about getting information sources increased, their digital competence enhanced and their attitude and perspective about digital usage and transformation were positive.

The improvements of digital literacy in all components indicate that the concept of digital library in this study had an impact on students' knowledge about information sources. Knowing sources of information which are free and accessible via internet had benefited EFL students to be exposed to learning materials relevant to the real situation of target language. This condition was potential to experience them to have comprehensible input from those resources. There were some factors that might cause this comprehension. Students became curious, motivated, got involved and interested in this digital learning process. They could be more innovative and creative in solving their task and problem in EFL learning.

Finally, students' ICT skills were also advancedly improved even though its improvement was the lowest among any other digital literacy components. In summary, students' ability improved not only on technical skills but also on problem solving skills with the use of digital tools.

CONCLUSION

Based on the results of this study, there was significant difference in digital literacy skill between experiment and control group in which experiment gained significant improvement in digital literacy total as well as in all components. In other words, weblog-library center was effective to improve digital literacy of EFL students.

However, it raises some important points both for EFL teachers and students. For teacher, using weblog-library center for learning purpose in classroom is effective as long as the facility and teacher's guidance support the learning process and web-based resources in EFL learning should be taken into account in this digitized learning era. However, teacher should be selective in choosing the appropriate materials. Meanwhile, students are highly suggested to use digital tools effectively for learning purpose so that they can optimize their EFL learning. Moreover, they have to upgrade their ICT skill as technology develops rapidly.

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