Development of Study Room Blog in Learning Reading Literacy in Elementary School

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ARTICLE INFO

**Keywords:**
Study Room Blog; Reading Literacy

**Article history:**
Received 2022-01-03
Revised 2022-03-14
Accepted 2022-05-25

ABSTRACT

Life has been changing rapidly. Industrial Revolution 4.0 is developed for people to make a novelty. Education as one of the important parts of people’s life is needed to be prepared for every change to improve the teaching and learning system. This article discusses a study conducted by using developmental research with the development of the 4-D design. This study was a Study Room Blog that was conducted for students who could learn individually based on the previous research and only focused on web development or e-module. The advantage of this Study Room Blog was equipped with an evaluation of students’ scores that could be accessed by teachers. The study involved the students in Elementary School to see their reading literacy. Based on the validator assessment result, the average score from the validation of IT-Technology Experts was 80, which was categorized as good. And the average score from the validation of the Linguist was 81.17, which was categorized as very good. It means that the blog could be used in the teaching and learning activity. After obtaining the validation assessment result from validators, then, this study room blog was applied by using a limited try-out which was applied in two classes, the experimental and control classes. In the experimental class, the average score of pre-test result was 50.71 which increased to the average score of post-test result, 80.9. In the control class, meanwhile, the average score of pre-test result was 60.57 which increased to the average score of post-test result, 75.89. Thus, the use of the study
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The study room blog was increasingly effective in learning reading literacy. It means that the study gives a contribution to the teacher and students in increasing reading literacy through the Study Room Blog as an interactive media in teaching and learning activities.

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1. INTRODUCTION

Nowadays, we have entered the Fourth Industrial Revolution which is a comprehensive transformation from a whole aspect of industrial production through the merging of digital technology and the internet with conventional industry (Yasmin, 2020). Industrial Revolution refers to the capability of the available information which was interrelated from each information to achieve new information (Kurniaman, Hidayat, Noviana, Munjiatum, and Kurniawan, 2020). Life has been changing rapidly. Industrial Revolution 4.0 is developed for people to create a novelty. It influences the change of the learning system in Education that makes technology as media (Noviana, Kurniawan, and Huda, 2018). In this relation, the Indonesian government also encourages the Industrial Revolution 4.0 and adjusts the change of learning system in Education.

Education as one of the important parts of people’s life is needed to be prepared for every change to improve the teaching and learning system. Creativity in teaching and learning is also considerably needed to give a learning facility and adapted to the era (Oranje and Smith, 2017), thus, teachers should give technology-based learning namely Study Room Blog. The change of teaching and learning systems and learner (Ehm, 2014) in learning technology is highly influential, most learner could be invariably connected to technology. By this mean, the way of learner’s reading literacy and their ability in collecting information will be also changed (Broek, 2011).

A survey concerning problems faced in the Education of Indonesia tells us the quality of Education is lower than in other countries. A survey conducted by the International Student Assessment (PISA) Program in 2018 which was released on Tuesday, December 3rd, 2019, describes that the study shows 600,000 children aged 15 years old based in 79 countries once three years. PISA is derived from the data that is collected from students’ assessments as the measurement result process of reading literacy and the basics in taking a decision designed to increase the students’ skills in the future (see Crandall et al., 2016; Webb, 2002). In accordance with this, the assessment of reading literacy can be obtained by using the study room blog that encompasses procedures to help the teacher in measuring the students’ skills (see also Cain et al, 2004). A means of increasing reading literacy skills should be administered by using the instruments of reading literacy assessment indicated from the reading literacy case based on PISA (Damaianti, et. al., 2020) as an indicator of developing this study room blog. In this relation, this study compares the students’ Math, Reading, and Science skill. Referring to the students’ Reading skills, Indonesia is ranked 74 with an average score of 379. Indonesia is ranked above the Uni Emirates Arab with an average score of 373. Furthermore, China is still occupying the first position with an average score of 591. This survey refers to the evaluation of Education quality in the world (Kemendikbud, 2020).

According to the data surveyed by PISA, due to Indonesians’ Reading skills which were categorized as low, it is required an improvement in Education, especially in the teaching and learning process applied by the teachers. Furthermore, it is indeed needed for the innovation of learning literacy.
in Media which motivates students to increase their reading literacy (Azimah and Kurniawan, 2019). The education field would not be linked to the reading context. It is because society’s life always demands reading activity (Pahrurrazi, et.al., 2018). Learning in reading literacy should be more interesting for students to enhance their motivation than others (Kurniawan, Noviana, Hernita, and Charlina, 2019). Moreover, it is expected for elementary students in showing their interest and motivation in reading, thus, a Blog will be created as a means of reading lessons. Different countries have begun to emphasize the research toward reading literacy as the implementation of reading context in social interaction (Biesman-Simons, et.al., 2020). The improvement will be seen on the way of teachers in giving motivation, samples, and interesting lesson studies (Meiklejohn, et. al., 2021) and involving media as facilitation based on this era (Schirmer & Schaffer, 2010). The importance of reading is to see a country’s progress in education as a learning impact.

Fundamentally, reading is a challenging skill that involves the measured components, not only elaborating every sentence but also involving the aspects of the students’ visualization, cognitive, psycholinguistic, and metacognitive process. As a visual process of reading, reading refers to the process of translating the written text into spoken language, comprehending literal, interpreting sentences, reading the text critically, and mastering reading understanding creatively. Identifying the words can be an activity of reading the words by using a dictionary (Farida in Kurniawan, 2016). In reading, students should be able to analyze, synthesize, and evaluate the reading content. By practicing this, students can be more creative and critical to find out the content of what they read (Jin and Qi, 2018). Concerning the previous theory, it shows that reading skill involves the strategic and interactive process which is aimed to find out ideas and obtain the message delivered from the writer to the reader (Maghfirah, 2018). In addition, it is required for students to join a course learning in increasing their reading skills. Reading course is needed in the habituation learning process (Verlaan, 2017) as facilitation that supports students’ reading literacy. Elementary school is a stake of facing the new learning system, thus, it should provide contextual-based learning (Safaruddin, et. al., 2020). Contextual learning in reading literacy will be supported by media either simple or technology-based learning (Rahmasari, 2022). This interest refers to the important use of study room blogs based on the students’ needs for advanced technology rapidly.

Blog is one of the websites or online journals which contains one or other thoughts of the writers in the case of getting the sequence and time description related to the posts chronologically (which means from old to recent contents) (Mubarok, 2018). This Study Room Blog is said as a medium to spread information in the form of posts that contains opinion, analysis, and another several digital data to the internet widely and sustainability. The content of this Blog is limitless, either in the form of text, pictures, and video or in a specific graphic format. According to the specification, a blog can be said as another domain of a website or link, but based on the form of usage, it is not pat and simply easier to access (Kurniawan, 2020). It is influenced by every individual who searched and used the link or website, including the content and the purpose of the application. At the beginning of its popularity, a blog is indeed more interesting to be used for individuals or small group who has a similar passion. Due to this, most of the writing contained reviewed the interesting content of certain topics. The application of blogs in learning will be contained by the option of features that can be applied by students easily by clicking their favorite features. A blog will be created by the students’ stories based on the level of the students themselves. In the case of the technological revolution, students in Elementary School as a generation of Z (Gen-Z) are no longer difficult to use Mobile Phones. By this mean, it is the characteristic of the Industrial Revolution 4.0 in which students have no longer familiar with it. Thus, blog eases the learning for students whenever they want to use and read. This study involves a formulation of the problem that is derived from the data to prove it. It can be seen as follows:

RQ1. How is the development of a Study Room Blog in reading literacy?
RQ2. How much is the validation of the Study Room Blog development assessed by various expert validators?
RQ3. Is it effective reading literacy learning by applying the Study Room Blog?
2. METHODS

This study was Developmental Research. Developmental Research is an elaboration process or the method of designing an effective product such as Study Room Blog which is applied to reading literacy for elementary students. The development model used in this study refers to the 4-D model which consists of defining, designing, developing, and disseminating (Thiagarajan in Multiyaningsih, 2011). It is a similar line to Borg and Gall (1983) statement, the aim of this study was to develop effective products in learning reading literacy, thus, it can improve the students’ skills in Elementary School. Based on Industrial Revolution 4.0, teaching and learning cannot be separated from technology, especially since technology has been a daily need for students. To see the effectiveness of the Study Room Blog, it was conducted in experimental and control classes by using the Quasi-Experimental method. To increase the students’ reading literacy in Elementary School, the phases will be described in the following explanation of blog development in Industry 4.0.

The first phase, define, is applied by studying the curriculum which is analyzed about the mapping of the curriculum, the basic curriculum, indicator, and learning objective to increase the students’ reading literacy in Elementary School. Hence, appropriate teaching and learning materials can be designed based on the theme of the teacher and students’ book in the teaching and learning process. In the analysis of students’ characteristics, the writers considered the academic ability of elementary students. In relation to the development of the Study Room Blog, the students’ ability for class V of Elementary School is necessarily measured to establish Study Room Blog in order to increase the students’ reading literacy in Elementary School in Industry 4.0.

Subsequently, the phase, design, is applied for the Blog design to increase the students’ reading literacy in Elementary School in Industry 4.0. In this phase, it is necessary for the writers to adjust the problem faced by the Blog design. In accordance with this, the writers designed the Blog Product that contains the teaching and learning materials based on the Curriculum of 2013 (K-13). The steps which are necessary to know in this phase can be described as follows:

- Designing the menu display on the Blog;
- Creating the teaching and learning materials adjusted to the theme of teacher and students’ books based on the Curriculum of 2013;
- Setting up an appropriate evaluation menu for teachers on the Blog menu.

The product produced in this phase is draft I of the Study Room Blog for Reading Literacy. Furthermore, the term ‘develop’ tends to the phase of developing the product which is designed in the previous phases such as draft I in order to increase the students’ reading literacy in Elementary School in Industry 4.0. Regarding this, draft I is produced from the previous validation phase validated by the experts and practitioners to see the appropriateness of the product itself. In this study, the validator consists of a Linguist, Media experts, and three teachers of Elementary School as the field practitioner and experts who apply the developed product. Hence, the validator will evaluate the first product of draft I and provide comments or suggestions. By this mean, the lack of draft I will be subsequently analyzed and revised based on the validator suggestion until designing draft II. After analyzing and revising draft I, draft II is then validated by the validator. According to the sequence of validation products above, draft II that has been validated will be tried out to 21 students of class III in elementary School in order to see whether the developed product can be able to measure the students’ reading literacy or not.

In addition to the previous explanation, the term ‘disseminate’ refers to the phase of the spread of product that has been developed by the writers. In this phase, the writers introduce the Study Room Blog for the teachers in Elementary School. After socializing the Blog, the writers deliver the questionnaire to see the teachers’ responses widely related to the Blog produced by the writers in this study.

Pertaining to the technique of data collection, the questionnaire is delivered to the Learning Media Experts, the Linguist, and the teachers of class III before trying out the product in the research field. It is aimed to get the assessment and input of Blog in reading literacy so that the Blog of reading literacy is
valid and deserves to be tested and qualified. In addition, the questionnaire is distributed to the teachers of class III to see the response of convenience in measuring the reading literacy for elementary students. The aim of this questionnaire is to obtain the data of students’ responses referring to Blog reading literacy that is later used to see whether the quality is good or not.

The data applied in this study is subsequently analyzed by using the technique of descriptive analysis in order to describe the result of the validation distributed to the validator after validating. The validation assessed by the validator is made in the Likert Scale with a range score of 1-4. The discretion is given for validators to assess the Blog Reading Literacy. The validity of Blog reading literacy products is determined through the average score given by the validator. It can be seen as follows:

| Score | Category          |
|-------|-------------------|
| 4     | Strongly Agree    |
| 3     | Agree             |
| 2     | Disagree          |
| 1     | Strongly Disagree |

(Source: Sugiyono, 2013)

The score of validation that is assessed by using the formula can be seen as follows:

$$\text{Total Score} = \frac{\text{Earned Score}}{\text{Maximum Score}} \times 100$$

The criteria of responses can be seen in the following table below:

| Average Score | Category   |
|---------------|------------|
| 81 – 100      | Very Good  |
| 61 – 80       | Good       |
| 41 – 60       | Average    |
| 21 – 40       | Less       |
| 0 – 20        | Poor       |

After obtaining the questionnaire of Study Room Blog distributed to the validator, the product is subsequently distributed to 10 teachers to see how the teachers’ responses as the practitioner will apply this product. The data of teachers’ responses will be analyzed based on the indicator of assessment. The category of teachers’ responses assessment can be seen as follows:

| Score | Category          |
|-------|-------------------|
| 4     | Strongly Agree    |
| 3     | Agree             |
| 2     | Disagree          |
| 1     | Strongly Disagree |

(Source: Sugiyono, 2013)

The score of validation that is assessed by using the formula can be seen as follows:
The criteria of responses can be seen in the following table below:

| Average Score | Category       |
|---------------|----------------|
| 81 – 100      | Very Practical |
| 61 – 80       | Practical      |
| 41 – 60       | Fair           |
| 21 – 40       | Impractical    |
| 0 – 20        | Very Impractical|

3. FINDINGS AND DISCUSSION

The development of the Study Room Blog is developed by analyzing the need in the current situation related to the learning of reading literacy in Elementary School. Industry Revolution 4.0 changes the use of technology in learning literacy. It is a must, especially in this pandemic era. It is because literacy is a basic skill that can make students get knowledge in selecting and analyzing information critically and also implementing it to make the right decision in their social life. The design of Blog or Website is designed to the students’ needs in the learning process and the convenience of using the application itself. Regarding this, it can be shown as follows:

Pertaining to the use of Study Room Blog described on the pictures above, the foremost step is to specify the hosting and domain that is working as a host of websites and an address used in the Blog. After specifying hosting, it is obtained that the Web Address or a Uniform Resource Locator (URL) that can be accessed by people is https://www.ruang-belajar.com/. Hence, by using the address, the admin...
enters the teaching materials based on the thematic book that has been revised and the test that should be answered by the students. Before accessing the Blog, the teachers and students are foremost guided by the admin to enter the name and identity of the school in order to save them in the database and ease the teachers and students to register or access the Study Room Blog. After the admin enters the name and identity of the school, the teachers and students that are going to access the Blog are required to register the account previously. The teachers have to see the steps of registering the account. To begin with the first step, the teacher accesses the website of Study Room Blog through https://www.ruang-belajar.com/. In addition, the teacher clicks the register menu on the Blog which is placed on the top of the Blog page. The teacher has to register first the account by using email. Hereafter, the teachers can have a username and password to log in to each account. Furthermore, the teacher can log in again with the previous website by using the registered email. After logging in, the teachers are leaded to the dashboard, then click the menu of students and write the students’ names on the Blog.

The use of Study Room Blog is easier accessed and practically used for students since the students are only entering the email address inputted by the teacher and not necessarily registering. The students are only opening the web addresses of Study Room Blog and logging in by using the registered email. Furthermore, the students can read the learning material on the Blog and finish the test based on the sub-theme learning. The result of the validation distributed to four IT-Technology experts as the validator in evaluating the Study Room Blog to reinforce the appropriateness in learning reading literacy can be seen as follows:

Table 5. Validation Result of IT-Technology Expert

| No  | Components                              | Average Score | Category  |
|-----|----------------------------------------|---------------|-----------|
| 1.  | Interesting front display              | 75            | Good      |
| 2.  | Easy to apply                          | 80            | Good      |
| 3.  | Simple and interesting menu display    | 85            | Good      |
| 4.  | Complete and obvious teaching and learning material | 70            | Very Good |
| 5.  | Evaluation menu to measure the students’ reading literacy | 85            | Good      |
| 6.  | Easy to evaluate the students’ reading literacy | 85            | Very Good |

Pertaining to the table above, the result of the validation of IT-Technology experts is seen from the average score of 80 categorized as good which is used in learning reading literacy. Based on the indicator of interesting front display, it shows that the average score is 75 in the good category. Based on the easiness of application in clicking the simple menu display used for students, the average score is 85 in the very good category. Based on the indicator of learning material of Study Room Blog with the material, learning objectives, indicator map as direction used easily for the teacher and students, the average score is 70 in the good category. After conducting students’ learning activities individually, based on the evaluation to measure the students’ reading literacy in Elementary School as learning outcomes and the indicator of successful teaching and learning process, it shows an average score of 85 in the very good category. Most importantly, in developing technology, it should give easiness for teachers to assess, evaluate and document the data result of students’ reading skills as an automatic indicator, which has an average score of 85 in the very good category since the easiness is seen as a priority in this development. The appropriateness of this Study Room Blog can be used for elementary
students as their learning activity more practice than others since it can also be accessed for them wherever they are. It can be seen on the total average score, 80 in the good category level.

Moreover, the teacher’s role in teaching and learning is very important in learning reading literacy (Crawley and Mountain, 1995; Kurniawan and Noviana, 2017). The Study Room Blog is equipped with the assessment as the indicator of reading literacy and the impact of teaching and learning activity. Elementary students refer to the basic level of every subject of learning. Comprehending reading literacy is a need for students in solving any problems in this life. Thus, the students can update the information they obtained (Sani, 2016; Susanti, 2018). The Study Room Blog is also validated by the Linguist to reinforce the appropriateness of the Study Room Blog as a means of teaching and learning process. The result of the validation from the validator gives a positive result which can be seen as follows:

### Table 6. Validation Result of Linguist

| No | Components                                                                 | Average Score | Category  |
|----|----------------------------------------------------------------------------|---------------|-----------|
| 1  | Easy to understand and simple language use                                | 85            | Very Good |
| 2  | Appropriate capital letters use based on Bahasa Indonesia spelling        | 82            | Very Good |
| 3  | The imperative sentence in literacy questions                             | 85            | Very Good |
| 4  | Appropriate test based on the indicator and learning objective            | 80            | Good      |
| 5  | Short and obvious material                                                | 75            | Good      |
| 6  | Obvious material and short question for examination                       | 80            | Good      |
|    | **Average Score**                                                         | **81.17**     | **Very Good** |

According to the table described above, the result of the validation of linguists regarding the language use of Study Room Blog can be seen from the average score of 81.17 categorized as very good. The language used in this Blog is based on the elementary students’ age level. With the appropriate question and teaching-learning material which is based on the students’ book, this Blog can help the students in the teaching and learning process based on the indicator and learning objective. After validation assessed by IT-Technology experts and Linguists, the Study Room Blog is then conducted the try-out in the limitation scale by using the Quasi-Experimental design in order to see the average score before and after conducting. In short, it can be seen as follows:

### Table 7. Result of Students’ Reading Literacy

| Class      | Pre-Test | Post-Test |
|------------|----------|-----------|
| Experimental | 50.71    | 80.9      |
| Control    | 60.57    | 75.89     |

Experimental and control classes are two classes that are seen as the try-out result of the Study Room Blog in learning the students’ reading literacy in Elementary School. The pre-test score of students’ reading literacy in the experimental class is 50.71 and the post-test of students’ reading literacy in the control class is 80.9. Conversely, the pre-test score of students’ reading literacy in the experimental class is 60.57, and the post-test score of students’ reading literacy in the control class is 75.89. To comprehend one reading material based on the differences in students’ level of reading literacy needs
technology or media to ease their learning literacy (Khasanah, 2021). It shows that the learning of the experimental class is more increasing in the pre-test to post-test result than the learning of the control class in the pre-test to post-test result.

Regardless of knowledge of reading literacy, the students also need the reading intervention in the form of a challenge, especially in the context of the resource of Information and Technology utilization (Campuzano et.al, 2009; Dean et.al., 2021). The various technology developed by a number of experts is to ease the students in reading, one of them is the Study Room Blog. Study Room Blog is a development of technology utilization and a means of learning. The use of this Blog provides the facility in learning based on the Curriculum of 2013 in which learning literacy should be supported by the internal and external motivation of students, by this means, the problem of students’ difficulty in learning reading literacy can be overcome (McTigue and Uppstad, 2018). Education is a dynamic field that consistently needs improvement with the emergence of teaching skills and teaching and learning activities in the class (Loopo and Balfour, 2021). Thus, a teacher or educational practitioner finds out the new method in teaching reading literacy by using a Blog in case of following the technology era. A teacher is expected to be able to follow the new revolution of reading literacy based on the government policy that emphasizes the learning of reading literacy as a benchmark in terms of evaluating the learning goals in the school.

Development of Study Room Blog is developed with a simple web design to be applied with Laptop or Mobile Phone use (Murnaka, et. al., 2019) to students’ learning process in Elementary School. Learning individually is needed for students in the learning process to encourage students’ motivation internally in gaining learning outcomes better than external motivation (Buchori & Setyawati, 2015). Learning activity by applying Study Room Blog utilizes internet access to increase students’ motivation, which can be able to be applied by them individually (Botting, 2020), in improving their quality of reading literacy. Thus, a teacher or educational practitioner finds out the new method in teaching reading literacy by using a blog in case of following the technology era. A teacher is expected to be able to follow the new revolution of reading literacy based on the government policy that emphasizes the learning of literacy as a benchmark in terms of evaluating the learning goals in the school. By this mean, related to the findings of the study discussed in this article, it is appropriately proven that A Study Room Blog is effectively applied in learning reading literacy for students in Elementary School as an interactive media in teaching and learning activities.

4. CONCLUSION

Development of Study Room Blog in learning reading literacy has been used in teaching and learning activities based on the validation of the IT-Technology experts with the result in a good category. In addition, the result of the validation of the Linguist showed that the Study Room Blog is very good to use. By these means, the development of this Blog was tried out to the limitation scale conducted in two classes in one school. In terms of concluding remarks, Study Room Blog in this study can obviously increase the students’ reading literacy in Elementary School. Limitation of this study is seen in the cost and time allocation. Hence, it is only limited to the phase of limited try-out that is applied by a few samples. Wide-scale try-out has not been carried out in this study, therefore, there is no description of the Study Room Blog effect on elementary students yet. For further research studies, the lack of design and application is required to be studied to make an improvement since there is a limitation on further research studies. It is recommended for the teachers to monitor the students’ activity in the teaching and learning process. It is because the level of students’ motivation and behaviors while learning activities in class is different. Even though the steps of Study Room Blog instruction are applied, teachers as the facilitator should monitor students’ activity while the teaching and learning process.
Acknowledgments: Thanks to the Dean of Faculty of Teacher Training and Education who gives the opportunity to the writers in getting the grant funding research funded by DIPA FKIP of Universitas Riau 2021. This paper is used as a required report of the grant funding.

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Development of Study Room Blog in Learning Reading Literacy in Elementary School

Otang Kurniawan, Eva Astuti Mulyani, Eddy Noviana, Intan Kartika Sari, Dede Permana, Ela Irnanda, Dzoelqa Wirya Nanda / Development of Study Room Blog in Learning Reading Literacy in Elementary School
Yasmin, P. (2020) Apa Itu Revolusi Industri 4.0 dan Contohnya? [Online] 17 Maret 2021. http://finance.detik.com/industri/d-5313643/apa-itu-revolusi-industri-40-dan-contohnya.