WEB-BASED LEARNING MATERIAL FOR RAISING STUDENTS’ LEVELS OF AWARENESS AND USE OF READING STRATEGIES

Alfi Suci Dirgantari
Kalimantan Institute of Technology, Balikpapan, Indonesia
alfisuci@lecturer.itk.ac.id

Healty Susantiningdyah
Kalimantan Institute of Technology, Balikpapan, Indonesia
susan@lecturer.itk.ac.id

Abstract

Being active readers is beneficial to students’ academic success. To reach that, students need to understand what the reading strategies are, and how, when, and where to use them. Unfortunately, most of the students in ITK are not using the strategies effectively, which then hinders their comprehension of English texts. To help improve students’ reading ability through the usage of reading strategies, this research proposed to develop a web-based learning material containing materials and exercises in using reading strategies in an academic reading activity. The development model of the e-learning material is following the 4-D model: define, design, develop, and dissemination. The data collected were in the form of feedbacks from peer-review (qualitative) and developmental testing (quantitative). The feedback from peer-review contained suggestions for the improvement of the website; the testing resulted in the score for the web. With the average score of 3.63 on the Likert scale, most students believed that this website would
be able to help them become more familiar with the use of reading strategies in academic reading.

Keywords
Reading Strategies, Awareness, Website, Reading, Learning Material, Students

1. Introduction

Having a reading skill is a must for university students. Unfortunately, while they have an adequate grasp on reading in their mother tongue, our students are still having difficulties in reading English texts; part of those difficulties stem due to the improper use of reading strategies. Before conducting this research, a survey was distributed to students of Kalimantan Institute of Technology. The survey containing 15 reading strategies usage (Mokhtari et al., 2018) showed that most students are not familiar with or have not yet utilized appropriate reading strategies in their academic reading activities. It is quite concerning since having the skill to use reading strategies as needed is one that separates active and passive readers; as active readers know what to do before, during, and after a reading activity, they will obtain more from what they read than the others (van Woerkum, 2012).

Much research has been done to analyze the use of reading strategies in students’ reading activities and the correlation to students’ academic achievement. Its results show that students with better awareness of the reading strategies in their reading activities attain better academic achievement (Sheikh et al., 2019; Abdelrahman, 2020; Armbrecht, 2018). Although there is no significant improvement to students’ readings scores when given reading strategies training, it is believed that the strategy training will affect students’ academic success in the long term (Abi & Kömür, 2018).

Reading strategies can be explicitly taught using direct explanation with relatively successful results (Chumworatayee, 2017; Khatri, 2018). Though most of those training is done through face-to-face, direct training. Yet, the current trend of teaching and learning, among other things, requires teachers and lecturers to adapt technology-based instruction. In Indonesia, in particular, the Ministry of Education starts to encourage universities to adapt to the blended learning method, rather than fully traditional classes, to facilitate students’ needs better. This is because students will have benefit in learning from an online source and then receive further instruction in the face-to-face classes (Mutawa, 2017).
The decision to incorporate teaching reading strategies and web-based learning is based mainly on the concern that lecturers do not have enough time to slowly teach their students how, when, and where to use reading strategies. In Kalimantan Institute of Technology (ITK), students are only given a semester for English class. Those students come with various levels of English; some can communicate quite fluently, while others are still having difficulty even with reading-aloud an English text. With the need to catch up with the bottom students to an acceptable level of English, sometimes certain materials have to be omitted in place of more pressing topics.

The focus on the reading strategies is not just due to the lack of reading skills. Since reading is a big part of their English classes, the problem in comprehending a reading text usually resulted in lower motivation for language learning. Reading is essential in language learning and can benefit students my many aspects of language (Alyami & Mohsen, 2019; Iruvuri, 2020). Thus, improving their reading skill is the focus of the study here.

The website as a media is chosen since it is believed to improve motivation and self-efficacy, and thus should be of help in their learning process (Xiao Ying Zhang et al., 2020). Teaching reading strategies to the students, especially in the form an explicit instruction, is essential (Magnusson et al., 2019), but we should also think of the most effective method to deliver that. Besides, research shows that in an online versus paper-based reading instruction,
students receiving online instruction perform better in reading comprehension than students who receive paper-based instruction (Huang, 2014).

The website will be focused on explaining each reading strategy that students can use in an academic reading activity and give them chances to practice using the strategies, and the definition and example of the usage will be written clearly on the web. By doing this, the website can satisfy the students' need to learn independently and with the freedom to decide when and how long they are going to learn. Since most students are from Generation Z, where their learning preferences are mostly through technology or the internet (Seemiller & Grace, 2017), then the use of technology in language class will hopefully appear more appealing for them as well as improving their motivation and studying attention (Ruiyang & Yuan, 2020).

2. Objectives

Students are still mostly unaware of the benefit of utilizing reading strategies in their English reading activities. They are also unfamiliar with various reading strategies that can be employed to help them comprehend English texts. Unfortunately, the English course provided in ITK cannot provide them with thorough instructions on reading strategies due to various reasons. Thus the need to prepare online instruction to supplement their lesson. That is why the main objective of this research is to develop a web-based learning material that can help to raise students' level of awareness and use of reading strategies.

3. Methodology

The following sub-headings will explain the research design, the population and sample for the tryout of the website, the type of data and their sources, the instrument for data collection, and the data analysis.

3.1 Research Design

The main focus of this research is to develop web-based learning material for teaching reading strategies. To develop the website, the researchers use the 4D Instructional development model by (Thiagarajan et al., 1974). The model consists of four stages: (1) define: analyzing the needs, the target students, and the task, (2) design: selecting the format and media and making prototype, (3) develop: testing and revising the website, and (4) disseminate: finalizing and distributing the final product.
3.1.1 Define

This stage was done by analyzing the problem, the characteristic of the students, the skills, and the objective. First, the problem was analyzed by giving students a standardized English test to measure their reading skills and then giving them a reading strategy questionnaire. Those were done to understand what their problems were in utilizing reading strategies in their academic reading. Second, the students’ English background was analyzed. In general, the majority of the students had received English lessons since elementary school. However, their English skills were not homogeneous; they ranged from A1 to C1 levels, with B1 as the level with the most number of students. The students’ level of awareness, based on the pre-study, was medium (between 2.5 – 3.4). Next, we also defined the objective, which was to introduce all types of reading strategies (global, problem-solving, and support) so that students would be aware and knew how, when, and where to use them in their reading activities.

3.1.2 Design

At this stage, the media was selected, which was in the form of a website. The content of the web was developed, and the plan on how it would be presented on the web was designed. The storyboard of the website was drawn in detail to give a clearer picture of the initial design of the website and then shown to fellow lecturers of English in ITK for their constructive criticisms.

3.1.3 Develop

After finishing the website prototype, it was evaluated by other lecturers (peer review) to see the feasibility of the website being used to teach reading strategies. Three lecturers were involved in this stage, two English lecturers and one IT lecturer. They evaluated the technicality of the web as well as the instructions contained on the web. The feedbacks were used to modify the prototype. After that, the prototype was tested by the future users of the web, students of ITK. The students explored the developed website for three days to ensure that they had ample time to explore the web and provide enough flexibility for them to read the material and finish the exercises. At the end of the tryout, they had to fill in a questionnaire about the website. Then the website was modified based on students’ feedbacks.

3.1.4 Dissemination

The final prototype was uploaded on the Campus’ server so that it can be freely accessed by the students. Figure 2 and Figure 3 show the appearance of the website when accessed using a
The prototype is by no means the final product of this web-based material for a website will be improved from time to time.

![Image of SAAE website]

Figure 2: *The front page of SAAE website*

![Image of SAAE website content]

Figure 3: *Sample of the Content*

### 3.2 Population and Sample

The population of the developmental testing is all students of Kalimantan Institute of Technology, and the sample was 74 students chosen by random sampling. The students were chosen among the first-year students (18-19 years old) taking the English course in Kalimantan Institute of Technology. They came from various study programs and were heterogeneous in
their English skill. It was noted that all samples were familiar with online learning using a laptop or smartphone.

3.3 Data and Data Sources

The data for this research consists of qualitative and quantitative data. The qualitative data is based on the comments and suggestions of fellow lecturers and the students. The quantitative data is from the score given by the students in the questionnaire. The sources of the data are three lectures, two in English and one in IT, and 74 students of ITK.

3.4 Instruments

To collect data, the instruments used in this research are (1) web-based learning material for raising students' level of awareness and use of reading strategies, (2) peer-review form, and (3) students’ questionnaire.

3.4.1 Web-based learning material

The website developed in this research is called Self-Access Academic English (SAAE). The website is currently only containing a module on reading strategies, as per the focus of this research.

3.4.2 Peer-Review Form

Three lecturers were asked to try out the website and, at the end of the tryout, they had to fill in a form. The questions were divided into two, technical and instructional. Each question was an open-ended question so that the lecturers could freely share their opinion regarding the website. There are only two questions for each aspect: (1) “what are the technical/instructional drawbacks of the website?” and (2) “what are your suggestions to improve the technical/instructional aspect of the website?”.

3.4.3 Students’ Questionnaire

The questionnaire students have to fill in at the end of the tryout consists of five main aspects: (1) the technical aspects of the web, (2) the suitability to target users, (3) the effectiveness of web design, (4) the clarity of the site, and (5) the characteristics of the questions (Meral et al., 2012). There are 12 questions in total, which can be seen in Table 1.
Table 1: List of Questions in the Students’ Questionnaire

<table>
<thead>
<tr>
<th>No</th>
<th>Question</th>
<th>Type of Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>I access the website using ____</td>
<td>multiple-choice</td>
</tr>
<tr>
<td>1</td>
<td>The website is easy to use.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>2</td>
<td>The appearance of the website is interesting.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>3</td>
<td>The website is suitable as college-level learning material.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>4</td>
<td>The website is suitable as an English course learning material.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>5</td>
<td>The design allows me to easily follow the lesson.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>6</td>
<td>The design helps me read the material and answer the questions easily (without unnecessary difficulty).</td>
<td>Likert scale</td>
</tr>
<tr>
<td>7</td>
<td>The ‘reading strategies’ module is easy to understand.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>8</td>
<td>I think the ‘reading strategies’ module helps me improve my reading skill.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>9</td>
<td>The instructions on the website are easy to follow.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>10</td>
<td>The exercises in the module help me deepen my understanding of the use of reading strategies.</td>
<td>Likert scale</td>
</tr>
<tr>
<td>B</td>
<td>Please write any suggestions or critiques you have on the website.</td>
<td>Short answer (open question)</td>
</tr>
</tbody>
</table>

The questionnaire is distributed through Google Form.

3.5 Data Analysis

The result of the peer-review was summarized to find the aspects of the web that required some revisions. The score from the questionnaire is calculated, and the mean scores were presented in the form of graphs.

4. Results

The main objective of this research is to develop a web-based material that can help improve students' level of awareness and use of reading strategies. The objectives of the website itself are: (1) introducing the concept of reading strategies to the students, (2) explaining the definition of each strategy, (3) providing examples on how and when to use the strategies, and (4) letting the students practice using the strategies in a reading activity. The module for reading
strategies is divided into two parts, explanation and exercise. Each of the 15 reading strategies in the MARSI-R list (Mokhtari et al., 2018) is explained, and most are given their corresponding practice.

Before students start working on the module, they had to fill in a short survey to check their awareness of reading strategies. At the end of the lesson, they have to fill in the survey again to check for any improvement in their reading strategies’ awareness. Thus, with the comparison, students will be able to measure their improvement.

Each type of reading strategies, global, problem-solving, and support, has its objectives. Thus, students will be able to keep track of what they learn easier. After reading the lesson objectives, they continue to read each explanation of the strategies. The explanations are followed by examples on how to use them through the use of authentic materials, for example, using a real front-and-back book cover to practice “previewing the text to see what it is about before reading it”. Lastly, the students work on the provided exercises, consisting of the combination of multiple-choice and short answer questions as well as their answers.

After finishing the module, they will be given an evaluation consisting of several texts and questions based on them. Students need to utilize the strategies they have learned to help them in answering the questions. There is a passing grade for this evaluation. Had they not passed it, they can re-take it as many times as they need.

The evaluation for the website is done twice. First is by fellow lecturers (two English lectures and one IT lecturer. The summary of the suggestions from them is in Table 2 below. Overall, they expressed that the website is appropriate for web-based learning with some revisions.

<table>
<thead>
<tr>
<th>Table 2: Suggestions from the peers (fellow lecturers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Aspects</td>
</tr>
<tr>
<td>• The registration procedure needs to be shortened.</td>
</tr>
<tr>
<td>• The information about students’ level of awareness should be more eye-catching and informative, as currently they just look like a part of the instruction.</td>
</tr>
<tr>
<td>• Some questions are not working.</td>
</tr>
<tr>
<td>• The navigation feature is a bit complicated. Make it simpler</td>
</tr>
<tr>
<td>Instructional Aspects</td>
</tr>
<tr>
<td>• Some strategies have too much explanation, while others</td>
</tr>
</tbody>
</table>

do not have enough.

- Make the explanation more attractive. Add color and pictures.
- Some instructions, especially in the practice part, need more to be revised as they are a little bit confusing.
- Some exercises need to be adjusted as they do not completely match with the strategies.

The second evaluation is by the students. Seventy-four students participated in the tryout. Longer than the evaluation done by the lecturers, the students were given three days to explore the web. The time allocation was given to mimic the real use of the website where students have freedom on when and how long to use the web. At the end of the tryout, students filled in a survey of the website. Five aspects – 10 statements in total – were scored. The scores ranged from 1 to 5; 1 means they strongly disagree while 5 means strongly agree. The mean score for each aspect can be seen in Figure 4, with all of the aspects score more than 3 (the average is 3.63). The means are 3.6 for Aspect 1, 3.8 for Aspect 2, 3.4 for Aspect 3, 3.7 for Aspect 4, and 3.7 for Aspect 5. The result means that most students that are involved in the tryout are 'agree' with the quality of the website.

![The Mean Score of Each Aspect](image)

**Figure 4:** Mean Score of Each Aspect
There is also the mean score for each question items in the questionnaire, as seen in Table 3.

**Table 3: Mean Score of Each Question**

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Question item</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspect 1</td>
<td>Item 1</td>
<td>3.64</td>
</tr>
<tr>
<td></td>
<td>Item 2</td>
<td>3.47</td>
</tr>
<tr>
<td>Aspect 2</td>
<td>Item 3</td>
<td>3.84</td>
</tr>
<tr>
<td></td>
<td>Item 4</td>
<td>3.75</td>
</tr>
<tr>
<td>Aspect 3</td>
<td>Item 5</td>
<td>3.45</td>
</tr>
<tr>
<td></td>
<td>Item 6</td>
<td>3.31</td>
</tr>
<tr>
<td>Aspect 4</td>
<td>Item 7</td>
<td>3.55</td>
</tr>
<tr>
<td></td>
<td>Item 8</td>
<td>3.81</td>
</tr>
<tr>
<td>Aspect 5</td>
<td>Item 9</td>
<td>3.74</td>
</tr>
<tr>
<td></td>
<td>Item 10</td>
<td>3.71</td>
</tr>
</tbody>
</table>

The two highest means are for Item 3 (3.84) and Item 8 (3.81), which are about the suitability for a university course and the improvement of the reading quality, respectively. The lowest means are both on Aspect 3 – Item 5 and 6 – which are related to the ease in following the lesson and the ease in reading the material. When looked deeper, it seems the main problems for the students are the navigation system of the website and the size of pictures uploaded on the web.

**5. Discussion**

Students from Generation Z are most adept at using technology, which enables them to be more comfortable in learning independently, like reading e-books, watching online videos, and other activities (Seemiller & Grace, 2017). Thus the use of web-based learning material is generally helpful in supplementing the students with more lessons that might not be delivered in the classroom setting due to several constraints. In this matter, time is the constrain belying this research as the English course in Kalimantan Institute of Technology is held in a limited time: only one semester with 14 meetings, each for 100 minutes.
The result of the pre-study, which shows that many students are yet to utilize reading strategies in their academic reading activities, necessitated the alternative method of teaching reading strategies, aside from in traditional settings. Online learning is on the rise nowadays, especially during the pandemic. However, the use of blended learning will still be used even after the pandemic, specifically in Kalimantan Institute of Technology. The effectiveness of online learning compared to the traditional classroom setting is still in debate. Though, it can be safely said that both are equal or almost equal in their effectiveness (Nguyen, 2015).

The proposed website should be able to help students gaining understanding and improving their level of awareness in the use of reading strategies. There are many websites containing reading strategies, yet those websites oftentimes do not provide all of the strategies. Some that do, do not provide exercises to let students practice how to use them in a reading activity. Besides, those websites also do not keep track of students’ progress in their level of awareness in reading strategies.

The website has a simple design and is easy to use. The instructional techniques used to teach students the use of reading strategies are mostly demonstration-practice method (Ghirardini & Organisation des Nations Unies pour l’alimentation et l’agriculture, 2011). The storyboard is straightforward: students can choose the strategy they want to learn, read the information of the strategy, and then do the exercises. At the end of the module, they are given an evaluation test, where they have to try to use reading strategies as needed.

The prototype of the website has been finished and tried. The students chosen as samples have submitted their scores regarding the quality of the web. There are some suggestions given to improve the website, such as to rework the navigation system and to add a 'resize' feature to pictures on the website. This suggestion has been noted and put into the act to revise the website.

Most students taking part in the tryout seem to have positive attitudes toward the website. Most believe that this website can help them improve their reading skills for they can learn how to implement reading strategies using the web. Thus they can start to be more active readers (van Woerkum, 2012). Their answer to the questions in the questionnaire is also valuable to the betterment of the website. It is because a good e-learning material needs to have a good connection between the content, the design, and the need of the users (Brown & Voltz, 2005). However, there is still no empirical study done to prove whether the effect of using the website
in tandem with the face-to-face meeting is better than full conventional instruction of reading strategies.

The website will be used as supplementary learning material. With the theory out of the way, a face-to-face meeting can be utilized as a way for students to practice what they have learned from the web. Also, students will still be able to have access to this web-based material even after they finished the course. As usually seen from non-language-major students, they only take the language course because they have to and will not get out of their way to further their learning after they finish the required course (Godwin-Jones, 2017). Thus, this material is hopefully able to motivate them to keep learning English and to keep utilizing reading strategies in their academic life.

What the website needs for improving the performance are simplifying the navigation system as many found it a little bit bothersome. Also, there should be a feature that enables users to zoom in or zoom out a picture. Besides, the website needs to be more responsive to different types of devices (Madjarov, 2016). Since the website is designed mainly for a large screen, students who use a smartphone in the tryout reported some problems, especially related to the appearance of pictures.

However, some limitations in this research should also be noted. First, there is a possibility of a sample bias. Samples for the quantitative data, the score of website try out, are chosen among students currently attending the English course. Therefore, they might be subject to biases in the scoring. While it might be so, aside from the scoring, students were also asked to write their opinion on the web anonymously, which potentially decreased the problem and allowed them to express their opinion more truthfully. Further testing in future research on the potential of the website from the point of view of the users is going to be proposed with more diverse and larger samples. Second, while evaluation by peers, fellow lecturers, was able to help in the process of web creation and that their suggestions and comments are valuable in this research, further evaluation by experts are still lacking in this research. However, this should not decrease the value of the website in its potential to improve students’ awareness of reading strategies.
6. Conclusion

From the research, it can be concluded that the website has a great potential to improve students' level of awareness and use of reading strategies. It can be used as supplementary material for English courses as well as independent learning material. The explanations and exercises contained on the web are hopefully able to encourage students’ self-learning since they can be easily accessed from their laptop or their smartphone.

The suggested use of this website is to let students explore and use it freely in their spare time, while the lecturers encourage them to utilize the strategies they have learned in the reading activity. It is imperative to give students as much practice as they need in the classroom to help them internalize the reading strategies to form a good habit.

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