International Journal of Engineering & Technology, 8 (1.1) (2019) 123-128

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper

The Evaluation of Web-based English Language Learning Media for Nursing Students

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Abstract

This paper was aimed at evaluating a web-based English language learning media collaboratively developed by the researchers, by using CMS, following the emerging notion about industrial revolution 4.0 and the internet of things, which was sounded by the government. This study employed case study design. This study involved the experts of both material expert in language teaching and IT experts as the evaluator from the perspective of their expertise. In addition, it also involved 50 students of the 4th semester from the nursing department of Universitas Muhammadiyah Kalimantan Timur as the evaluating users of the websites. The data was analyzed descriptively and the data collected from surveying the students was analyzed by using SPSS descriptive quantitative. The result showed that the web which had been developed as material for language learning is feasible after getting valuable feedback from the experts and the students as the user. It can be concluded that the web-based language learning media developed by utilizing CMS was very useful, easy, and practical for both the teacher and the students.

Keywords: *Language Learning; Learning media; the internet.*

1. Introduction

The growth of internet users in Indonesia has increased dramatically in the past decade. One of the causes that contributed to the raise of the users was the high rate of smart phone users. According to the data released by the Ministry of Communication and Information from *Emarketer*, a research centre, active internet users in Indonesia are approximately 100 million users placing Indonesia as the fifth country with the largest internet users leaving Russia, Germany, England, and France [1][2].

It is impossible to deny the fact that people now are more familiar with the technology devices leading to more things associated with technology to increase the accessibility of any services, including educational services. This issue triggers both the researchers and the practitioners in education get involved in researching the possibility of integrating IT and education.

The integration of technology and the science of pedagogy has been long done by the researchers since first invention of the computer. It has been the fundamental foundation for current researchers and practitioners in the field of education to keep updating the knowledge and the research practice since the technology is inevitably developing. Furthermore, according to the data released by the Ministry of Communication and Information, the numbers of smart phone and internet users in Indonesia have reached more than 100 million users that this information revealed that Indonesian people have been very familiar with technology and its devices. In addition, the majority of those users are the youths with high school and college education background. Therefore, it is essential for the developers of learning media to make use of technology in creating the media for language learning.

Numerous studies have been done related to this topic. First, Rahmayani[2] conducted a study involving the teachers of elementary school with the aim of helping them develop a web-based learning media for elementary school students. In this study, the researcher succeeded help the teachers from a remote area integrate the learning process with IT-based learning media by using some simple and free websites. Second, in the study conducted by Susilo et al.,[3] they created the product through R&D. It can be accessed at databaseforsmk.com. She tested the usability, functionality, and visual communication of her website in addition to validation from the experts. The study showed that the website she designed was feasible for classroom use. Third, a study employing a method that takes advantage of website as learning media in blended learning was also conducted. In the conference paper presentation, Lukitaningrum [4] had explored online class for Indonesian language class. The website she developed was using Moodle (modular object oriented dynamic learning environment) application. With the use of this web, the learning process can be done directly and indirectly.

From the previous studies, it can be concluded that in Indonesian context the R&D research in the field of education is not new. However, there are some gaps that can be filled by new studies. Considering the study conducted by Susilo [3], the study was about integrating the use of free web like provide by Google like Blogspot. This type of web is very limited and has its own characteristics since it is designed for blogging where the posts cannot be well arranged as the will of the users. It could not be optimally be used for learning media with all learning characteristics like curriculum availability, evaluation, etc. The second study Lukitaningrum[4] was focusing on developing the learning materials for high school students, which means it is still possible to develop such web-based learning material for higher education. In addition, the study by Atyana[5] was only exploring the experience of blended learning. Therefore, this study can fulfil the gap that it is using Content Management System that would ease the researcher develop the web accordingly with the requirement of a good

learning media. Not only will the study fill the gap of previous research, this research also provides benefits for the teacher and the students as the user of the developed system. From pedagogical perspective, the web-based learning media had represented an autonomous learning and task based learning which is responsible for developing students' cognitive ability, raising students' motivation, and maintaining students' engagement in the learning process [6][7][8][9].

2. Method

As the aim of the study was to evaluate the web that was developed by the researcher, the current study employed case study design [10]. Case study design was chosen to be the core research design because the researcher wanted to conduct in-depth exploration the perspective of the experts and the users of the web which was designed for certain community, in this case the nursing students at Universitas Muhammadiyah Kalimantan Timur (UMKT), a university located in the heart of Borneo Island, East Kalimantan. In the province, it is the only university that conducts nursing program. It was considered a distinctive case.

The subjects of the research were the web designed by the researcher and 50 nursing students of UMKT were invited for evaluation as the users of the web. These 50 are the whole students of the class from the fourth semester. The class as the population was chosen randomly, and the sample taken was whole sampling.

The main instruments in this study were the researcher himself, questionnaire, and documents. The questionnaire was used for evaluating the web from the expert of IT, the expert of English language teaching, and the students once the web was ready. Meanwhile, the documents were used when the needs analysis were conducted.

The data which was collected was analyzed descriptively. Especially, the data taken by questionnaire was analyzed by using descriptive statistics on SPSS application.

3. The System and Design of the Website

Designing was done in order to determine the process flow or system flow of how the learning was done on the website. In this study, the process flow was described by using context diagram and the web design was described in simple diagram, as shown in Figure 1.

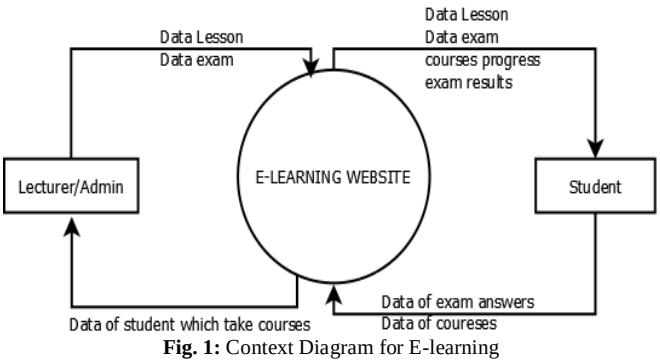

Fig. 1: Context Diagram for E-learning

Context diagram above explains the rights to access the system and how the data transaction happens in the system. There are two main actors to access the web. The first actor was the lecturer acting as the administrator and the students acting as the user, as shown in Figure 2.

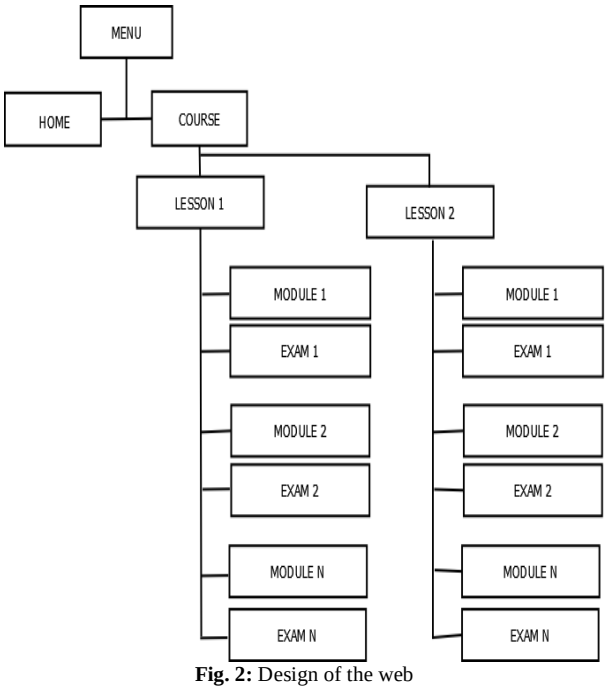

Fig. 2: Design of the web

From the diagram above, it can be seen the design of the web. The web has two main menus, "home" navigation that gives the user access to the homepage of the web and "course" menu that provides the lesson for each material. Each material consists of modules that explain curriculum as well as the materials to be learned and exercised as evaluation.

4. Results

4.1. Study and Needs Analysis

On this stage, the results show that there was discrepancy between what the curriculum asked by the department of nursing and the students' ability. Based on the data collected in the field (written test and interview) the students found the book assigned for the program was too difficult due to their low ability. Therefore, the researcher decided to adjust the materials to be a little bit lower so that the students can understand therefore it could lead them learn to a more difficult material.

4.2. Web design

The following step was the web designing. The web was developed accordingly with the planned design by using CMS Wordpress with LearnPress Plug-in. The following figure 3 until figure 6 was the home pages of the web and the functions in table 1 for figure 3 then table 1 for figure 4.

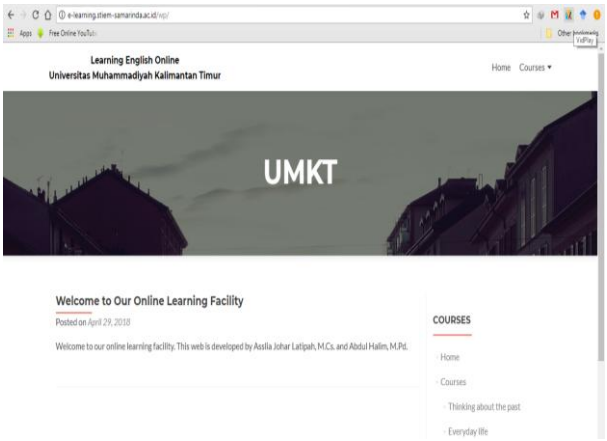

Fig. 3: Homepage

Table 1: Functions for figure 3

Navigation	Function
Home	The navigation that leads to homepage
Courses	The navigation menu used for showing the available courses for the users
Thinking about the past	Sub Menu of the courses that offers *Simple Past Tense* materials
Everyday Life	Sub Menu of the courses that offers *Simple Present Tense* materials

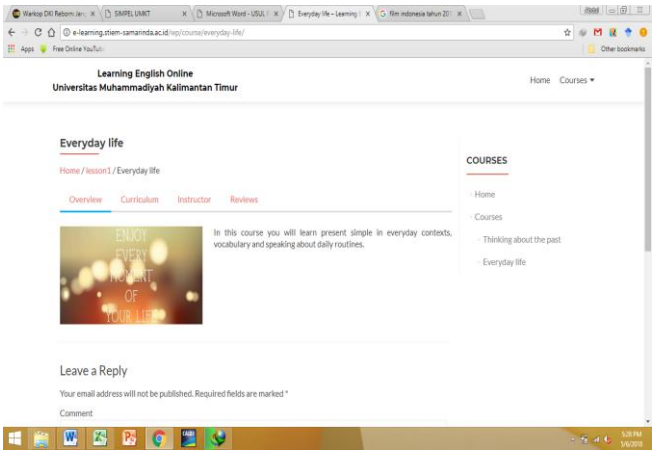

Fig. 4: Course page

Table 2: Functions for figure 4

Navigation	Function
Overview	Explains briefly about what to learn in the sub menu.
Curriculum	Explains about the stages the students need to learn and evaluation in order to pass.
Instructor	Explains who lead the course
Review	Used to review the lesson.
Leave a reply	Used to leave a comment on the lesson and Used for discussions among students and the instructor.

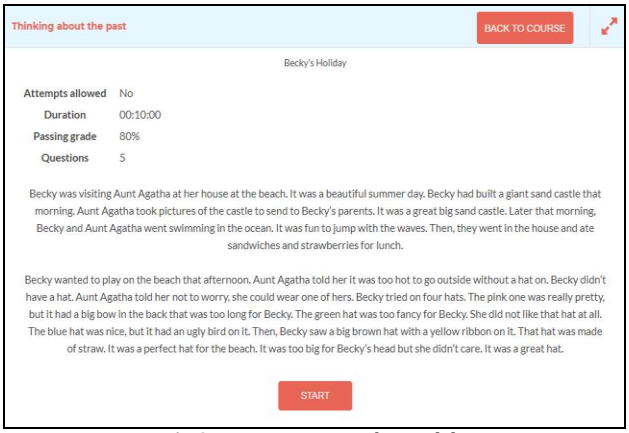

Fig 6. Learning Page in the Module

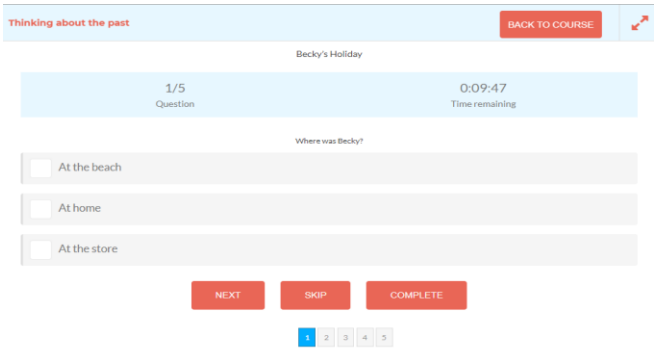

Fig. 5: Quiz Page

4.3. Web Evaluation

Once the web was ready, two experts were invited to examine the web from the field of IT and from the field of English language teaching. The following diagram 1 was the evaluation result from IT expert:

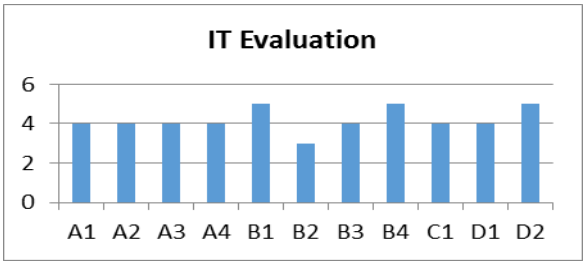

Diagram 1: Evaluation from IT Expert

There were four aspects evaluated by the expert in the IT field, i.e. testing the website navigation (A), appearance and wheather it was readable (B), the ease of access (C), and design (D). From the aspect of website navigation, all indicators such as functionality of the navigation (A1), navigation menu operation (A2), accessibility to the menu of curriculum (A3) and quiz menu scored 4.0 out of 5.0. Other three indicators also scored 4.0, they were design (B3), ease of access (C1), and if the web was readable (D1). Meanwhile there were three indicators that scored 5.0 out of 5.0. They were indicator B1 about the ease of accessing the web by using PC/laptop, the clarity of the font (B4), and the availability of contact for help (D2). However, the indicator for accessing the web with mobile phone only scored 3.0. diagram 2 shown the evaluation from the expert of ELT.

Table 3: Students' response

No	Indicator	Aspect	Evaluation						
			SD	D	N	A	SA	Mean	Standard Deviation
1	The web has readable font	Design	0	0	1	36	13	4.24	0.476
2	The web presented suitable illustration		0	0	0	14	36	4.72	0.454
3	It is easy to access the web		0	1	2	27	20	4.32	0.653
4	The available menus were helpful		0	1	5	27	17	4.2	0.7
5	The web has systematic learning process		0	2	3	15	30	4.46	0.788
6	The design of the web was interesting		0	0	0	24	26	4.52	0.505
7	Leave a reply column was fully functional		0	0	1	0	49	4.96	0.283
8	Main navigation was easy to access	Operation	0	0	1	33	16	4.3	0.505
9	It was easy to access Navigation of sub menu		0	0	9	27	14	4.1	0.678
10	It was easy to access Materials		0	0	2	32	16	4.28	0.536
11	It was easy to access the quiz menu		0	0	2	30	18	4.32	0.551
12	It was easy to understand the language		0	1	7	22	20	4.22	0.764
13	The instructions were clear		0	0	3	13	34	4.62	0.602

Diagram 2: Evaluation from the Expert of ELT

As mentioned earlier, the web was also evaluated by the expert of English language teaching. The graphic above explained the result of the evaluation. From the graphic it can be concluded that the web was also feasible for classroom use.

There were five indicators that scored perfectly 5.0 out of 5.0, i.e. evaluation (X9), exercises (X8), timer (X7), curriculum (X4), and adjustment of level of difficulty with the students' proficiency level (X3). However, the web scored fairly on the aspect of design (Y2) and font size (Y3). The students' respond at table 3.

From the two perception aspects surveyed from the students related to their opinion towards the design and the operational of the web, generally they perceive positively. It can be seen from the score of each indicator that scored 4.0.

According to the students' opinions, from the aspect of design the web was receivable. First, three indicators scored with mean score above 4.5 (very good). These indicators were related to the illustration, design, reply column meanwhile the indicator related to font, the ease of access, and menu scored between >4.0 and <4.5. Second, from the aspect of web operational there was one indicator that scored >4.5 i.e. the instruction of the web. On the other hand, main menu navigation and sub menu, quiz menu, the language used in the web scored >4.0 and <4.5. It showed that it was in good category.

5. Discussion

The web which can be accessed on https://e-learning.stiem-samarinda.ac.id/wp was fully operational considering the results of all experts and users. The evaluation of the web to be the learning media can be reflected from some aspects, such as: the process of constructing the web and its components and then the experts' evaluation and of course the students as the users of the web.

In the process of website construction, one of the most important stages was the needs analysis [11][12]. Based on the result, there was a gap between what the program asked through its curriculum and the students' proficiency. Whereas, according to Hutchinson & Waters [11] in order to get the most of the lesson in English for specific purposes the students need to be on the threshold level. The gap between the students' real ability which was too low and the requirement from the curriculum should be facilitated by designing the material with more general English. Later when the students are ready to absorb a rather difficult lesson the lesson can be more difficult. It is in accordance with scaffolding theory in Zone of Proximate Development (ZPD) as suggested by Vigotsky [13]. Therefore the researcher developed the materials that was suitable for the students ability and then later the web can be developed to be more accommodating with the department curriculum. Thus, through this web-based learning media both the students and the department can have mutualism relationship. It was done considering the importance of curriculum not only as structured materials to reach the aim of the lesson [14], but also the necessitate of broadening the learning opportunities [15].

The web developed by the researcher, besides having the component of curriculum, has the instrument for exercise and evaluation that are really representative as learning media. Not only can it replace the traditional media like traditional books, it can also be the media for automation in the process of learning evaluation and it may trigger autonomous learning.

This web also equipped with the availability of the evaluation with various type of objective test such as true-false and multiple choice as proposed by Earle [16]. It became one important point from the expert of English language teaching in which such evaluation process was a must in learning process so that the result of learning is measurable.

Furthermore, this web-based learning media has become an empirical rebuttal on negative view points of the use of the internet that integrating technology in education was time consuming since the people need to be educated for internet literacy. First, the fact that internet users in Indonesia have reached more than 100 million users proven that many people are now computer literate [2]. Thus, moving on from traditional book to web-based learning media would not be a problem. Second, the infrastructure of the web developed by the researcher has covered important components of curriculum with all the stages students need to follow and the evaluation. The expert of English language teaching even gave positive appreciation to this aspect so that the web is very feasible for classroom use.

Nevertheless, the web is of course in need of improvement. From the IT expert's evaluation, although the web was fully operational on PC but when tested on mobile phone, some mobile phone could not process the whole page, it required specific specification of the phone so it was not very mobile friendly. Considering that most internet users in Indonesia were the users of mobile phone [2] the researcher needs to take the issue of mobile friendly into account.

Based on the field observation the negative side of using IT-based media in education that it takes time and needs process to educate people so that they are technology literate was not proven. In the field, when collecting the data the researcher found that all students are used to using technology devices so that it was not difficult to use web-based learning media in the class.

The discrepancy happened between the standard set by the department of nursing for English for Specific Purpose and the students' proficiency. Most students were still in the elementary level. This situation made it difficult for them to study the target language since theoretically they need to be in the threshold level in order to study ESP more smoothly [11]. It made the researcher develop the materials with general English first so that the students can elevate their ability and then be ready for the ESP lesson [12].

Based on the evaluation of IT expert, the web was feasible and was fully operational, although it needs future improvement for mobile devices especially when accessing the quiz.

The web was also evaluated by the expert in English language teaching and it was categorized as good. Nonetheless, there were some points to improve such as design and instruction clarity. From the perspective of the students as the user, the web has scored 4.0 out of 5.0. Therefore the web can function fully as learning media for the students.

6. Conclusion

To conclude the discussion of this paper, an idea of aiding a teacher with web-based learning media was empirically proven to be novel and appealing. Teachers, especially those who teach ESP had faced numerous problems with students' engagements and motivation which in no doubt would affect the students' cognitive development during the learning process.

Furthermore, relevant with the current practice of language learning methods, which however there is no best prescribed method [17], this study have explored that in order to deliver the best learning materials for the students teachers need to have a grasp about the students need and what the stakeholders order through needs analysis.

Suggestions were also proposed for future research. Firstly, this website was limited when accessed with mobile phone; further research can be done to develop a more mobile friendly web-based learning media. Secondly, this web was equipped with two variation of objective test. Developing other types of objective test (e.g. matching, fill in the gaps) and subjective test was recommended. Thirdly, this web has not provided sign up and login facility. Further development in this direction can make the web more powerful since the users and the lecturer can track the progress of learning and evaluation.

References

[1] Hidayat, W. (2014). Pengguna Internet Indonesia Nomor Enam Dunia [Indonesia The Sixth Internet User in the World]. Available online: https://www.kominfo.go.id/content/ detail/4286/pengguna-internet-indonesia-nomor-enam-dunia/0/sorotan_media. Last visit 10.12.2017

[2] Rahmayani, I. (2015). Indonesia Raksasa Teknologi Digital Asia [Indonesia as the Giant of Digital Technology in Asia]. Available online: https://www.kominfo.go.id/ content/detail/6095/ indonesia- raksasa-teknologi-digital-asia/0/sorotan_media . Last visit 10.12.2017

[3] Susilo, B., Effendi, R., Maizora, S. (2017). Membangun Pembelajaran Berbasis Web (E- Learning) Bagi Guru Sekolah Dasar Pinggiran Kecamatan Muara Bangkahulu Kota Bengkulu [Developing a web-based learning for the teachers of Elementary Schools at Pinggiran Village Bengkulu City]. Jurnal pengabdian Masyarakat Indonesia, Vol. 1, pp 1-5.

[4] Lukitaningrum, H. (2016). Pengembangan Media Pembelajaran Berbasis Web pada Materi Basis Data di Sekolah Menengah Kejuruan Kelas XI [Developing a web-based learning material for data base lesson at vocational high school grade XI]. Available online: http://eprints.uny.ac.id/44391/ 1/Hesti%20Lukitaningrum% 2009520244045.pdf. Last visit 10.12.2017

[5] Atyana, E. R. (2014). Pembelajaran Jarak Jauh Berbasis Web dalam Meningkatkan Keterampilan Berbicara Bagi Siswa Kelas XII di Australia [Web-based long distance learning to improve speaking skills for XII graders in Australia]. Available online: https://www.ialf.edu/asile/EllisReniArtyana- PembelajaranJarakJauh.pdf. Last visit 10.12.2017

[6] Robinson, Peter (2003) The Cognition Hypothesis, Task Design, and Adult Task-Based Language Learning. Second Language Studies, 21(2), Spring 2003, pp. 45-105.

[7] Thorne, S. L., Black, R. W., & Sykes, J. M. (2009). Second Language Use, Socialization, and Learning in Internet Interest Communities and Online Gaming. The Modern Language Journal, 93(5), 802–821.

[8] Ushida, E. (2013). The Role of Students' Attitudes and Motivation in Second Language Learning in Online Language Courses. The CALICO Journal, 23(1), 49–78.

[9] Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. Internet and Higher Education, 7(2), 95–105.

[10] Kumar, Rajit. (2011). Research Methodology a step by step guide for beginners. New Delhi: Sage Publication India, Pvt, Ltd.

[11] Hutchinson, Tom., Waters, Alan. (1987). English for specific purposes. Cambridge University Press.

[12] Flowerdew, L. (2012). Needs Analysis and Curriculum Development in ESP. The Handbook of English for Specific Purposes, 325–346.

[13] Vygotsky, L. S. (1978), Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.

[14] Sanjaya, Wina. (2008), Kurikulum dan pembelajaran: Teori dan praktek pengembangan kurikulum tingkat satuan pendidikan (KTSP) [Curriculum and learning: the theory and the practice in developing school-based curriculum]. Jakarta: Prenadamedia Group.

[15] Young, M. (2014). Curriculum theory: what it is and why it is important. Cadernos De Pesquisa, 44(151), 190–202.

[16] Earle, Frederick S. (2007), How to Construct and Administer Objective Tests Correctly. Alabama: Golden Laurel Publication.

[17] Brown, H. D. (2002). English language teaching in the "post-method" era: Toward better diagnosis, treatment, and assessment. Methodology in language teaching: An anthology of current practice, 9-18.