ISSN: 2581-1274

Web-Based English Vocabulary Learning System Using Rapid Application Method

Aprinia Handayani [a,1,*], Samsoni [a,2]

[a] *Faculty of Computer Science, Informatics Engineering Program, Pamulang University, South Tangerang City, Indonesia*
[1] *dosen02719@unpam.ac.id*;* [2] *dosen00388@unpam.ac.id*
** corresponding author*

ARTICLE INFO

Article history:
Published

Keywords:
Vocabulary Learning
Web Based Learning
Rapid Application Development
English
Flashcard Learning

ABSTRACT

English lexicon dominance is one of the imperative viewpoints in dialect learning at the Kindergarten (TK) level. Be that as it may, ordinary strategies utilized in lexicon learning are frequently less curiously and less successful in spurring understudies to memorize. The foundation of this think about is the require for a more interactive learning framework that's in understanding with innovative advancements to back the educating and learning handle at TK Al Amanah. The issue confronted is how to plan a lexicon learning framework that can increment students' intrigued and understanding successfully. As an arrangement, this consider proposes the improvement of a web-based English lexicon learning framework utilizing the Fast Application Advancement (RAD) strategy. The RAD strategy was chosen since it is able to create quick models and include clients in each organize of improvement, so that the coming about system can be more in agreement with the requirements of clients, in this case understudies and instructors at TK Al Amanah. The framework developed includes highlights such as intelligently works out, advanced flashcards, and tests planned to create it simpler for understudies to memorize and get it lexicon. The investigate strategy includes needs examination, framework plan, model advancement, testing, and assessment. The trial comes about appear that this framework is not only able to extend understudy inspiration and interest, but too gives comfort for instructors in conveying learning materials. Hence, this web-based learning framework offers an innovative solution that can bolster the method of educating English lexicon at the kindergarten level

I. Introduction

The world of education in Indonesia is currently adapting to the changing times, marked by improvements in the quality and quantity of education that never stop [1]. These efforts are made to adapt and balance the development of the demands of the millennial world which is accelerating very quickly, therefore the education system is developed according to the needs and developments that occur, both locally, nationally and globally. English has been widely introduced from an early age in both formal and non-formal schools [2]. Various studies have proven that early age is the most sensitive age for learning a language. For example: children aged 2-5 years are very sensitive and easily absorb what they hear and can then immediately say it, even if it is only simple vocabulary [3]. On that basis, English teaching for early childhood children starting from Kindergarten/PAUD and Elementary School has been widely offered in various schools in urban areas.

English education needs to be started early, including at the Kindergarten (TK) level, to equip children with language skills that will be useful in the future. One of the basic components of language learning is vocabulary mastery. In kindergarten, English vocabulary learning is often done using traditional methods, such as word repetition and the use of picture books. Although these methods have benefits, this conventional approach is often less interesting for children who are more

interested in digital technology and interactive media. TK Al Amanah as an educational institution is committed to providing optimal learning that is in accordance with the needs of children in the digital era. However, the challenge faced is how to develop learning methods that are not only effective but also interesting and in accordance with technological developments. The use of technology in education, especially through web-based learning platforms, can be the right solution to increase students' interest and motivation in learning English vocabulary [4].

This study aims to develop a web-based English vocabulary learning system in TK Al Amanah using the Rapid Application Development (RAD) method. The RAD method was chosen because of its characteristics that allow for rapid and iterative system development, and involve users in every stage of its development [5]. This approach is considered appropriate for creating a system that is not only quickly implemented but also able to meet the specific needs of users, in this case students and teachers. With this web-based learning system, it is expected to provide innovative solutions in the process of learning English vocabulary in TK Al Amanah. This system will be designed with interactive features that can increase active student participation and make it easier for teachers to deliver learning materials. This research is also expected to be a reference for the development of similar systems in other educational institutions.

II. Method

The method used in creating this Web-Based English Vocabulary Learning System for Al Amanah Kindergarten Students is as follows [6]:

A. Data Collection

a. Interview: It is a data collection technique that involves direct interaction between the interviewer and the respondent to obtain in-depth information about the subject or topic to be discussed. In an interview, the interviewer asks questions or those that arise spontaneously based on the answers given by the respondent. The purpose of this method is to dig up more detailed information and gain a deeper understanding of the respondent's views, experiences, or opinions.

b. Literature Study: This method is done by searching literature on early childhood education, learning media and the development of early childhood psychology, the sources of this literature study are books, journals and the internet.

B. System Development Methods

The following are the stages of the rapid application development system method, as follows:

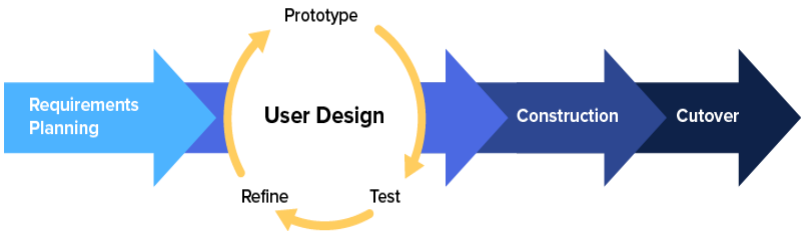

Fig.1. Stages of the Rapid Application Development Method

Below is an explanation of the rapid application development method [4][7]:

a. Requirements Planning: This phase involves identifying and gathering user needs and system requirements. The development team works closely with end users to understand the business needs and goals of the project. The main focus is to define the scope of the project and the basic requirements of the application.

b. User Design: At this stage, developers start creating a prototype based on the needs that have been identified. This prototype is an early version of the system that allows users to see and

interact with the basic features of the application. Users provide direct feedback, which is used to refine and improve the prototype.

c. Construction: Once the prototype is approved, the development team begins building the full application. This phase involves coding, system integration, and unit testing. Even in the construction phase, user feedback is still being received and implemented, allowing for more adaptive system development.

d. Implementation: At this stage, the developed system is thoroughly tested and prepared for use in a production environment. End users are trained to use the system, and the system is moved into the operational phase. This stage also includes documentation and troubleshooting of any issues that may arise during implementation.

III. Results and Discussion

In this study, the design of the Web-Based English Vocabulary Learning System at TK Al Amanah was carried out using the Rapid Application Development (RAD) method. The data required for this requirement is the email and password data used by the admin to access and manage the website [6][8]. For the Animal feature, input from the admin is required in the form of animal images, and sound files to notify the name and English of the animal. While for the Fruit feature, the same as Animals, input from the admin is required in the form of fruit images, and sound files to notify the name and English of the fruit. For the next feature, Numbers, the input required from the admin is in the form of simple number images (1-10) and audio as a guide for children to guess the number. For the Color feature, it is almost the same as animals and fruits, but the images stored are two-dimensional images with certain colors, and of course there are sound files to notify the name and English so that students can quickly digest it.

a. Use Case

Use Case Diagram is used to describe the interaction between users (actors) and the system [9]. The use case diagram on the Let's Get to Know website describes several things that admins and visitors can do. Admins can access the admin menu for the Animals feature, Fruits feature, Numbers feature, and Colors feature. Admins can add content and delete content. While visitors can access learning while playing Animals, Fruits, Numbers, and Colors.

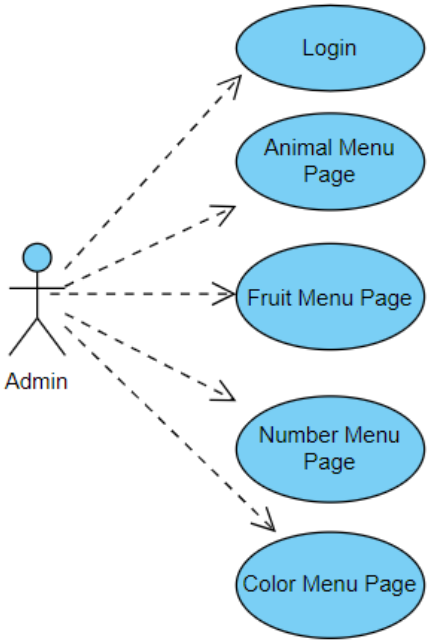

Fig. 2. Use Case Diagram

b. User Interface

1. Home Page View

The home page display is the first page seen when accessing the Let's Get to Know page for visitors. There is also an account login for the Let's Get to Know admin, a menu of features such as animals, fruits, numbers, and colors, and there is a help menu as a visitor guide menu.

Fig. 3. Home Page View

2. Animal Menu Display

The image below is the implementation structure of the menu design for the Animal feature. There is a home menu to return to the home page, there are Indonesian and English audio buttons to play sounds, and buttons to open the previous and next images.

Fig. 4. Animal Menu Display

3. Number Menu Display

The appearance of the number menu structure is still the same as other menus. In this menu there are Indonesian audio buttons and English audio buttons, and there is a section to place images, buttons to open previous images and subsequent images, there is a home menu to return to the initial menu page on *Mari Mengenal*.

Fig.5. Number Menu Display

4. Color Menu Display
   The appearance of the color menu has no structural difference from the Animal and Number menus, the way to run the menu is still the same as the other menus. The difference between the Animal, Number and Color menus is only in the background display. It is distinguished so that the display is more attractive and does not make users who play feel bored.

Fig.6. Color Menu Display

IV. Conclusion

The main conclusions of this study are as follows:

1. This web-based learning system offers a more interactive and interesting way for students to learn English vocabulary. Features such as quizzes and learning materials that are tailored to the level of difficulty of students provide a more enjoyable learning experience.
2. The system developed with RAD is flexible so that it allows for the addition of features in the future based on the needs of educational institutions. This makes this learning system able to develop along with changes in technology and teaching methods.

References

[1] J. Shen, "Using Mobile game-based English Vocabulary Learning Apps to Improve Vocabulary Acquisition in Primary School," *J. Educ. Humanit. Soc. Sci.*, vol. 8, pp. 82–86, 2023, doi: 10.54097/ehss.v8i.4230.

[2] Z. Fengyu, "The Impact of Vocabulary Learning Methods on Students' Vocabulary Application Skills," *English Lang. Teach. Linguist. Stud.*, vol. 5, no. 4, p. p206, 2023, doi: 10.22158/eltls.v5n4p206.

[3] A. A. P. Arsana and A. A. P. Maharani, "the Use of Flashcard in English Vocabulary Learning," *JOSELT (Journal Stud. English Lang. Teaching)*, vol. 2, no. 2, pp. 25–33, 2021.

[4] R. irma Handayani and D. A. Astuti, "Application of the Rapid Application Development Model to a Web-Based Library Information System," *Informatics Softw. Eng.*, vol. 1, no. 2, pp. 68–75, 2023, doi: 10.58777/ise.v1i2.163.

[5] A. D. Supriatna, "Designing library information system using rapid application development method," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 434, no. 1, 2018, doi: 10.1088/1757-899X/434/1/012259.

[6] V. Y. P. Ardhana, M. Sapi'i, H. Hasbullah, and E. A. M. Sampetoding, "Web-Based Library Information System Using Rapid Application Development (RAD) Method at Qamarul Huda University," *IJICS (International J. Informatics Comput. Sci.*, vol. 6, no. 1, p. 43, 2022, doi: 10.30865/ijics.v6i1.4031.

[7] P. Raine, "Developing web-based english learning applications: Principles and practice," *Call-Ej*, vol. 19, no. 2, pp. 126–138, 2018.

[8] M. R. Hidayat, I. Jaelani, and M. A. Komara, "Web-Based Scholarship Management Information System Using Rapid Application Development (RAD) Model," *RISTEC Res. Inf. Syst. Technol.*, vol.

2, no. 2, pp. 41–50, 2021, doi: 10.31980/ristec.v2i2.1947.

[9] G. Booch, *The Unified Modeling Language User Guide*. in The Addison-Wesley object technology series. Pearson Education, 2005. [Online]. Available: https://books.google.co.id/books?id=xfQ8JCbxDK8C