

## Designing Superlary Game to Learn Vocabulary of Tenth Grade Students

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**Abstract:** *The background of this research is important of vocabularyt in learning English. But students still difficult to adding and memorizing the vocabulary. So, to help students for learning it, the researcher develop platformer game with combination material of tenth grade students and have the result Superlary Game. To develop this media, researcher used the Sugiyono development model. This development aims to give the media to learn English vocabulary in order to increase motivate to learn English of tenth grade students of senior high school. Based on the Sugiyono model, researcher only use eight from ten steps, namely potential and problem, data collection, design product, design validation, design revision, product trial, product evaluation and final product. English Learning media produced in the form of computer-based game application used programer construct 2, which contains the second semester vocabulary material for class X SMA / MA students. This media completed with guiding book of how to play the game. The student's response for this game have the result large scale trials obtaining total score are 816 from criterion score 960, percentage of students' response are 85% this valued include in  $80 < x \leq 100\%$  in criterion score. So it can be concluded that the learning media developed is very good for use in learning classes in class X SMA / MA on second semester vocabulary material.*

**Keyword:** Platformer, Game, Vocabulary, Learning Media

### INTRODUCTION

Vocabulary is a basic aspect of language that must be mastered to communicate. Vocabulary is also an important part of learning a language that has been mastered, especially English, which is the main foreign language used after local languages. According to Hatch and <sup>1</sup> vocabulary is a list or set of words for a particular language or a list or set of words that individual speakers of language might use. However, many students have not mastered a lot of vocabulary. This is because students still have difficulty learning and adding new vocabulary. The weak mastery of vocabulary makes it difficult for students to learn English, especially in speaking and communicating.

Sari <sup>2</sup> states that vocabulary mastery can be improved by using learning media. She also supported that media is really affecting students in learning vocabulary, <sup>3</sup>. Vocabulary mastery can be improved through learning media such as simulations and games. Games as learning media are called educational games. With games in learning, students will feel happy with the ongoing

<sup>1</sup> Evelyn Hatch and Cheryl Brown, *Vocabulary, Semantics, and Language Education*. (ERIC, 1995).

<sup>2</sup> Hesty Puspita Sari, "The Effectiveness of Using Pictures in Teaching Vocabulary to the Sixth Grade Students of SDN Singkalanyar I Prambon Nganjuk Viewed from Their Motivation (An Experimental Study)" (UNS (Sebelas Maret University), 2008).

<sup>3</sup> (Sari et al., 2018)

learning. This is supported by <sup>4</sup>:39) who state that the value of educational games increases in language education because they make education fun. According to <sup>5</sup> teachers can use existing technology to become an appropriate learning medium, making it easier for students to receive learning material. <sup>6</sup> adds that game can motivate and interact students to learn. Students having high spirit to ear due to they are learning not seriously but by playing game<sup>7</sup>.

<sup>8</sup> in his book explains that interactive learning is often known as computer-based learning. By using computers, educators can develop design, production, implementation, and learning evaluation materials. The advantages of computer-based learning are stated by including the use of computers in educational institutions to provide flexibility for students to determine learning speed and to choose the order of learning activities according to their needs. According to <sup>9</sup> 2001: 26-28) the benefits of computer-based learning are computers that really support individual learning, where an individual learning system is recommended in modern education.

Based on previous research, it has been explained that the learning model in the form of games or games can increase the attractiveness of children in learning and improve children's abilities in understanding learning material. This game application develops with the previous application, namely the Development of M Quotting Platform for object name recognition in 3 languages for early childhood using Construct 2, where construct is an integrated game engine software to create HTML5-based 2D games that support various platforms such as PC, iPhone, Mac, Android, IOS and browser <sup>10</sup>.

From previous research by <sup>11</sup> entitled The Effect of Big City Adventure Game Media Utilization on Learning Outcomes of English Vocabulary Mastery in Class II Madrasah Ibtidaiyah Students Ihyaul Ulum Bluri Lamongan stated that percentages are the result of a number an average of 86,11 %. If on the criteria for qualitative data the percentage classified as Good Once.

Based on the description above, the researcher is interested in conducting research on the effect of the superlary game in mastering vocabulary in class X IIK 2 MA Bustanul Muata'alimin, Blitar. The digital media for Superlary games will be useful to help students master vocabulary.

## METHODS

The model used in this study is the <sup>12</sup> model by using several stages. This development research uses the eight stages as follows.

### 1. Analysis of Potential Problems

In the first stage of this research, the researchers found potential and problems after observing the initial needs analysis by interviewing and distributing questionnaires to teachers and students of SMA Bustanul Muata'alimin. Researchers conducted interviews with class X teachers with the aim of knowing the use of instructional media in class and student difficulties in learning English. From the observations, the researcher found problems that could become obstacles in the learning process, namely the difficulties of

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<sup>4</sup> Derakhshan & Khatir (2015)

<sup>5</sup> Aunurrahman et al., (2017)

<sup>6</sup> (Sari & Hestiningrum, 2019)

<sup>7</sup> Abdul Muhid et al., "Improving Islamic Elementary Students' Reading Comprehension Skill through Survey, Question, Read, Recite, Review (SQ3R) Strategy," *International Journal of Psychosocial Rehabilitation* 24, no. 7 (2020): 9589–9598.

<sup>8</sup> Erlinawati et al., (2016)

<sup>9</sup> Ismaniati,

<sup>10</sup> Emy Nurchasanah, S T Endah Sudarmilah, and M Eng, "Pengembangan Multiplatform Game 2D Pengenalan Nama Benda Dalam 3 Bahasa Untuk Anak Usia Dini" (Universitas Muhammadiyah Surakarta, 2016).

<sup>11</sup> MUFLIHATUN NISWAH, (2014)

<sup>12</sup> Sugiyono (2008)

students in mastering English vocabulary and also the use of less attractive learning media such as the use of textbooks and worksheets.

This is due to the lack of creativity and innovation of educators in the use of learning tools. Therefore, there is need for innovation, namely by developing technology-based learning media, the hope is that students will be more active and motivated to use game-based learning media.

## 2. Data Collection

After making observations in the form of interviews and distributing questionnaires to class X teachers and students, potential and problems were obtained, then it was necessary to collect information that could be used to design media products that were expected to solve problems. The method to be used depends on the problem and the accuracy of the objectives to be achieved.

## 3. Product Design

At this stage the researchers began to prepare the materials needed for media production including hardware in the form of computers, class X textbooks and software such as the Construct 2 application, Corel Draw x7 and preparing material to be included in the media. In making a game application, the maker also prepares the images needed in the game, such as characters, background, ground and other images needed in making the superlary game.

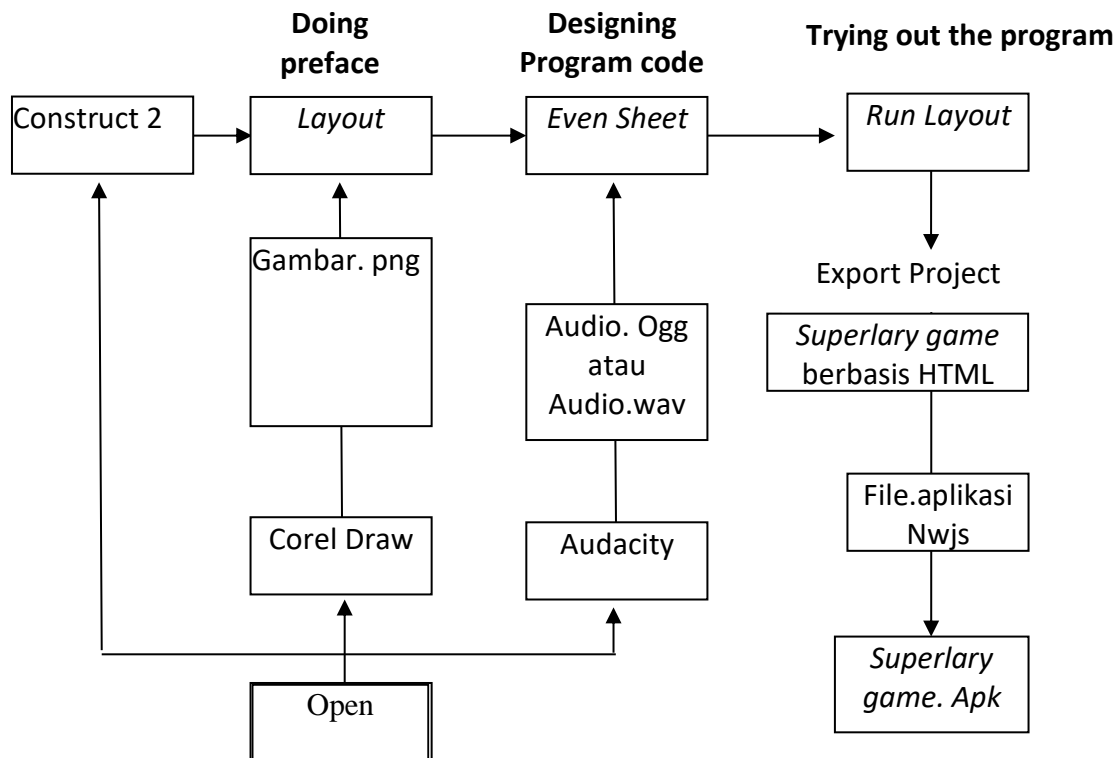


Chart 1. Design *Mock-up* product

a. Layout (interface)

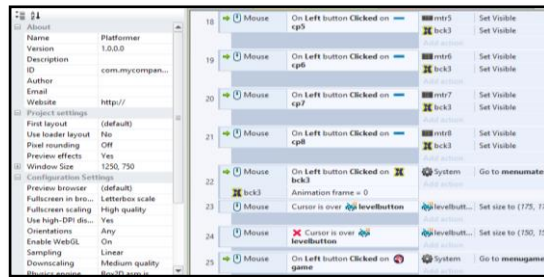
In the chart above, it is explained that there are several interesting things in this game-based media. The material is designed by combining animations that are compiled as a whole. In this game there are backgrounds and quiz-seeking adventures. The initial step of development is to collect backgrounds and create images (characters, keydoors, quizzes, ground, backgrounds) based on portable network graphics (.png) using Corel DRAW X7. Furthermore, programming is carried out based on the procedures mentioned above. Sprites buttons, backgrounds are collected and arranged into a complete unit on the Construct 2 worksheet or layout.



Figure 1

b. Writing program code (coding)

The coding process is done on a worksheet called an event sheet, where there are logics for running the layout. In this logic, there are various terms such as global variables, instance variables, in general language this logic is termed "if then" logic.



c. Add backsound

At this stage the back sound and sound effects are added in the programming. The backsound of the game consists of several pieces of the song put together with the help of the Audacity application. Then export the sound into an Mp3 based file. To convert Mp3-based files into OGG or WAV-based files, it is used for a converter application which is accessed online at the address' [online-audio-converter.com](http://online-audio-converter.com).

d. Implementation

The implementation stage is a concrete step to apply learning media that has been developed according to its role and function, namely the superlary game. After the programming is complete, the application is based on HTML5 which can only be run using a web server. In order to run on a computer device, an auxiliary application or converter is needed which can be used for free and the maximum result is a converter from Nwjs application files that can be accessed offline.



Figure 2

#### 4. Design Validation

After the product design is finished, the next step is to validate the product design to the media validator and the material validator. The validator consists of three media validators and three material validators. The validation instrument used by the validator is a closed questionnaire.

#### 5. Design Revision

After the validation is done, data is obtained in the form of criticism and suggestions from the media validator and the material validator. These criticisms and suggestions will be used to improve and refine the product design developed in order to produce computer-based media with the Construct 2 application that is suitable as a learning medium in the classroom.

#### 6. Product Trials

The trial at this stage used the Quasi Experiment method with a one group pre-test post-test design. The sample in this study were students of class X IIK 2 in the population of Class X MA Bustanul Muta'alimin, totaling 24 students. Data collection techniques were obtained from vocabulary learning outcomes, for that in this study using test and questionnaire techniques. The test technique in this study was a learning outcome test which was carried out twice, namely before being given treatment (pre-test) and after being given treatment (post-test). The test given is in the form of multiple choice questions, the pre-test and post-test questions are the same questions to avoid changes and students' knowledge and understanding after the treatment. The questionnaire technique used was to determine student responses to the use of the Superlary game digital application media used in learning English vocabulary.

#### 7. Product Evaluation

Product evaluation is carried out after the trial is carried out, based on input from students and teachers who have tested learning media. Product evaluation is carried out to complement the deficiencies that exist in the media to achieve maximum product.

#### 8. Final Products

The final product of Pafda's superlary game media is a computer-based game application that supports 64-bit computer systems. Equipped with a manual for using media and materials and questions summarized in the game.

## 2.2 Functional analysis and how it works

Computer-based media with the Construct 2 application in the form of 2D games. At the start of the game there is the name of the game accompanied by the profile of the maker, the "start" menu and the "exit" menu. In the start menu, there are materials and games, each of which consists of eight chapters. In the material, the vocabulary is presented in accordance with the material for class X semester 2. And in the game there are also eight levels that are made with different views and the difficulty level of playing at each level. The games developed can make it easier for educators to deliver English vocabulary material because the media developed has the convenience of educators to operate it. The developed media is also quite easy to distribute because we only need to copy the finished draft to duplicate it. For students, this developed media can make it easier to learn English vocabulary because in the game examples of English vocabulary needed by class X semester 2 students are provided. In addition, in the game there are also questions related to the material to see how many words have been mastered.

### 2.3 Implementation Plan

The implementation plan for using the developed media uses an individual learning model with the Student Center Learning method. The media and materials used are 2D computer games with the Construct 2 application. This trial aims to assess the quality or feasibility of the computer-based Superlary Game media product with the Construct 2 application and the influence of media on student motivation and learning outcomes.

The first stage the educator opens learning activities by opening greetings, leading prayers and checking student attendance. Then the educator conveyed the basic competency and learning objectives to be achieved, as well as the learning methods to be used. Furthermore, the educator provides direction about the Superlary game and how to play or operate it. The next stage, the students worked on the questions by playing the superlary game learning media. In the Superlary game, the score obtained by each player is listed so that students can immediately know the score or value that has been obtained. If a character in the game falls, the score is automatically lost and the game returns to the beginning. The educator gives an award to the student who gets the highest score, then the educator invites students together to repeat the English vocabulary that has been learned from the superlary game learning media. Finally, the educator closes the lesson.

## RESULTS AND DISCUSSION

Table 1 Result of Material Validation

Statement	Validator 1	Validator 2	Validator 3	Total Score
1	4	3	5	12
2	4	3	4	11
3	4	3	4	11
4	5	4	5	14
5	4	3	5	12
6	5	3	4	12
7	5	3	4	12
8	3	3	4	10
9	4	3	5	12
10	5	3	5	13
11	4	3	5	12
<b>Account</b>				131
<b>Criterion Value</b>				165
<b>Presentage</b>				<b>79,39%</b>

Based on table 1 the assessment on the material validator has a total value of 131 with a percentage of 79,39%. This assessment is in the good category with the criteria of 60-80%.

**Table 2** Result of Media Validation

Statement	Validator 1	Validator 2	Validator 3	Total Score
1	5	5	5	15
2	4	4	5	13
3	4	5	4	13
4	5	5	5	15
5	5	5	5	15
6	5	4	4	13
7	5	4	5	14
8	4	5	5	14
9	4	4	4	12
10	5	4	4	13
11	5	4	4	13
12	5	4	4	13
13	4	4	4	12
14	4	4	4	12
15	4	4	4	12
16	5	4	4	13
17	5	4	5	14
	<b>Jumlah</b>			226
	<b>Nilai Kriteria</b>			255
	<b>Presentase</b>			<b>88,62%</b>

Based on table 2 the assessment on the media validator has a total value of 226 with a percentage of 88.62%. This assessment is in the very good category with the criteria of 80-100%.

### 3.1 Trial results

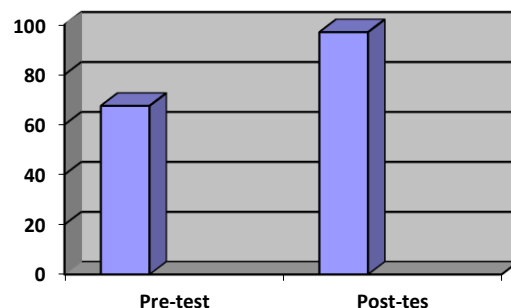
#### Results of pre-test and post-test

Based on the research that has been done, the pre-test and post-test results were obtained, the pre-test results showed the students' mean score was 67.5 and the post-test results showed the students' mean scores were 97.

For the results of the pre-test and post-test data analysis, it is known that the results of vocabulary mastery show an increase, this can be proven from the difference in the results of the scores before learning and after learning that has been produced. This is shown by the results of calculations using the t-test with a significant level of 5%,  $db = N-1 = 23$  with  $T0.05$ , so that the t-table is 2.069 and the t-count is 19.0815, so  $t_{account}$  bigger than  $t_{tabel}$  there are  $19.0815 > 2.069$

Thus in this study,  $H_a$  reads "There is a significant influence in the use of media in the game of Superlary on the learning outcomes of mastery of English vocabulary in class X IIK2 MA BUSTANUL MUTAALIMIN Kota Blitar" can be accepted. This is evidenced by the results of the hypothesis above.





## CONCLUSION

Based on the discussion above, it can be concluded:

1. English learning media produced in the form of computer-based game applications called Super Lary uses application construct 2, which contains the second semester vocabulary material for class X SMA / MA students. This learning media was developed with adaptation using Sugiyono's development method. The steps for product development are as follows: 1) Potential and Problems, 2) Collecting Information, 3) Product Design, 4) Design Validation, 5) Product Revision, 6) Trial Use, 7) Product Revision, and 8) Production Mass.

2. The response of students to the learning media developed is very good. It can be seen from the results of large-scale trials obtaining total score are 816 from criterion score 960, percentage of students' response are 85% this valued include in  $80 < x \leq 100$  % in criterion score. So it can be concluded that the learning media developed is very good for use in learning classes in class X SMA / MA on semester vocabulary material.

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