THE DEVELOPMENT OF SKILLS DRIVING LEARNING IN SMA PGRI SITURAJA

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ABSTRACT

The skill of driving learning extracurricular in SMA PGRI Situradja still has some problems, that is driving practice the car is done directly on the road which can lead to accidents, lack of understanding of regulations, traffic signs, and inavailability of driving practice place. From the results of these interviews by a simulation in order to help students in extracurricular lessons of driving Skill more effectively. Similarly, the results of the initial research questionnaire to high school students PGRI Situradja can be concluded that students' learning skills of car driving in that extracurriculer lack of understanding, and it can give bad impact to other studetnsthe impact who are not competent .

Methods of learning media application development have used methods of Luther Sutopo which show the concept, design, collection of material, design and testing. For the learning process using Computer Aided Learning (CAL), that of the tutorial method is used in the explanation of materials and components, whereas the simulation methods are used in the installation of components - components of the refrigeration system.

The Applications of learning media built is a simulation learning applications driving skills car-based desktop using 3D object that can provide media practicum tools learning to understand the material and cope with accidents and increase the value of competence in Skills of Cars Driving can be seen from the test results of the black box and results of questionnaires to 20 respondents.

Keywords: car driving skills, simulations, instructional media, interactive learning

1. PRELIMINARY

SMA PGRI School Situraja is contained in Sumedang District of Situraja, and in SMA PGRI Situraja has four ektrakulikuler learning programs including the scouts, pencaksilat, computer skills and also a car driving skills. Program extracurricular learning driving skills is the only car of its extracurricular that is not contained in other high schools, and driving a car can be one chance in the field of employment. By DR. Hj. Miming Karmila, MM as headmaster of SMA PGRI Situraja, after all the support facilities, is expected of our students can further explore the potential of each, both in academic and non-academic, and expected by the program estrakulikuler new skills, namely his driving skills and skills computer, whose implementation began 2014/2015 teachings on the results of consultation with a range of schools and school supervisors advice.

Based on interviews with teachers extracurricular skills of driving a car on behalf of Mr. Suherly Bimjati, as a teacher who teaches ektrakulikuler skills of driving a car in SMA PGRI Situraja of the interview obtained the result that there are currently several obstacles that arise when providing practical teaching extracurricular skills of driving a car SMA PGRI Situraja, namely the practice of driving a car is done directly on the highway that lead to accidents for younger learners at the time of driving the car, a lack of understanding of students about the signs traffic signs on the highway, and the high costs incurred students for car maintenance and fueling in extracurricular skills of driving the car, on the other hand there are the training ground for ektrakulikuler car driving car driving skills in SMA PGRI Situraja. From the results of these problems seen from the results of the practice of driving a car within 10-15 minutes that can be said at 20 students of class X, XI, and XII who follow extracurricular skills driving the car there are 14 students who did not pass, because no solution this time for extracurricular skills of driving the car in SMA PGRI Situraja, so that affected the lack of understanding of students learning to drive a car on a car driving skills in extracurricular SMA PGRI Situraja.

Pursuant to the problems that have been outlined, we need a system that can provide learning and simulation skills of driving a car that can be used as a medium of learning by teaching SMA PGRI Situraja. Thus it will be built a media solution extracurricular learning driving skills-based desktop that uses 3D objects that can be interacted by the user so that the application can provide a solution to the problems that exist.

1.1 Research Methodology

The methodology used in this study is

1.1.1 Identification Of Problems

Phase to find the problems that occurred in the study, namely SMA PGRI Situraja. So from the

existing problems will be determined what the system required by SMA PGRI Situraja.

1.1.2 Data Collection

Data collection methods used in this study are:

a. Study of literature

The study of literature is the technique of data collection by collecting literature, journals, and other readings as well as utilizing the Internet media related to the topic of research.

b. Observation

Data collection techniques by conducting research into SMA PGRI Situraja and review directly to the issues taken.

c. Interview

Data collection techniques by conducting a question and answer directly to Mr. Suherly Bimjati related problems taken at baseline.

d. Questionnaires

Data collection techniques by providing a set of questions to respondents who were students of SMA PGRI SITURAJA the applications are built.

1.1.3 Analysis System

This phase is carried out a needs analysis in building applications Learning Media in SMA PGRI Situraja. The analysis will include problem analysis, analysis of current procedures and analysis of interactive learning.

1.1.4 Design

This phase is to design anatarmuka for Learning Media applications to be built in SMA PGRI Situraja

1.1.5 Implementation

This phase is done Implemantasi Learning Media application that has been built as a hardware implementation, software implementation, application implementation, implementation of the interface

1.1.6 Examination

This stage of testing on learning media application that has been built. Tests will be done to the application with the Learning Media aims to find deficiencies contained in the application is built.

1.1.7 Conclusion

This stage is the final stage, at this stage the conclusions of the research conducted in SMA PGRI Situraja whether the application is built, namely Application Media Learning Skills Driving a Car in accordance with the original purpose.

1.2 Driving Skills Car

Car driving skills is one extracurricular only offered via the science education in SMA PGRI Situraja, precisely benama Extracurricular Education Car Driving Skills. Car Driving Skills Extracurricular education to learn about the driver and traffic signs.

1.3 Computer Aided Learning (CAL)

Computer Aided Learning (CAL) is a learning method that uses computer media, where this method of teaching can deliver directly to the user through how to interact packaged in the form of software. Computer Aided Learning (CAL) to use the computer as a tool to understand what is in teaching, coaching, guiding and assessing the achievements of the students so that the students become more interested and adds to the impression of teaching. Computer Aided Learning has (CAL) 4 concepts, concepts that include:

1 Explanation (Tutorial): the material presented in the form of text and pictures and done gradually.

2 Exercise (Drill) and Practice (Practice): Researchers provide or primary materials to users through existing software, so that the user of the software can perform the exercises of the questions that have been provided.

3 Simulation: a simulation program available by combining design and equipment training to obtain a quick response from complicated problems.

4 Game: the game, students can learn in a relaxed atmosphere in this way is an effective way of learning, because of the relaxed atmosphere of students are not under pressure so it's easy to catch the material provided quickly.

2. ISI RESEARCH

2.1 Analysis Applications Will Be Built

Applications to be built based desktop, the application serves as a medium of learning in extracurricular skills of driving a car. In using this application users use the computer as a tool running applications extracurricular learning media skills of driving a car. The system architecture of instructional media materials traffic signs, driving training and driving simulation.

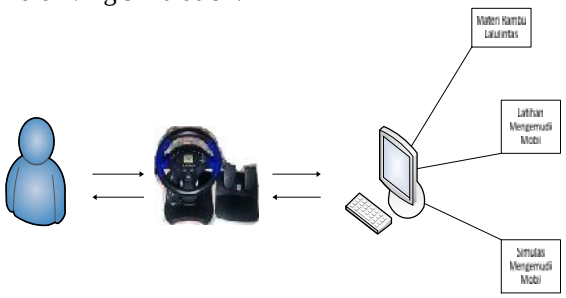


Figure 1 System Architecture

2.2 Material Analysis

The materials will be displayed in the application of learning media skills of driving the car as follows:

Table 1 Analysis of Material

No	Matter	Information
1	Material Traffic Signs	➔ signs ban ➔ Rambu warning ➔ Rambu command ➔Rambu user ➔Rambu while

2.3 Needs Analysis Software

The software is used in a system are directives given to the hardware in order to interact between them. Based on observations exist, software owned by SMA PGRI Situraja as follows:

Table 2 software requirement specification in SMA PGRI Situraja

No	Software	Specification
1	Operating system	Microsoft Windows 7
2	Application Modeling	Unity 3D

2.4 Hardware Requirements Analysis

Analysis of the hardware used to facilitate the design and implementation. Based on the analysis carried out on existing infrastructure such as hardware used in SMA PGRI Situraja as follows:

Table 3 analyzes the hardware in SMA PGRI Situraja

No	Hardware	Specification
1	*Processor*	Processor with a speed of 2.0 GHz
2	Monitor	Monitor with a resolution of 1024 x 768 pixels
3	Graphic Card	VGA 512 MB
4	*Memory*	RAM 2 GB
5	*Mouse*	Standard
6	*Harddisk*	80 GB

2.5 Analysis of User Needs

Analysis is an analysis of user devices that use a media application skills learning to drive a car. The users involved in application development.

Table 4 User Knowledge Level

No	users	Last Education	Capabilities
1	teacher	D3 or equivalent	Able to use computer
2	learner	Menenga School (SMP)	Able to use computer

2.6 Functional Needs Analysis

Analysis of functional requirements is the analysis used to make the flow of data. Analysis of functional requirements describe the activities to be implemented in the system and explain the necessary requirements for the system to run smoothly and according to need. The functional requirements in applications that will be built with modeling OOP (Object Oriented Programming) with the tools StarUML.

2.6.1 Use Case Diagram



Figure 2 Diagram Use Case

2.6.2 Class Diagram

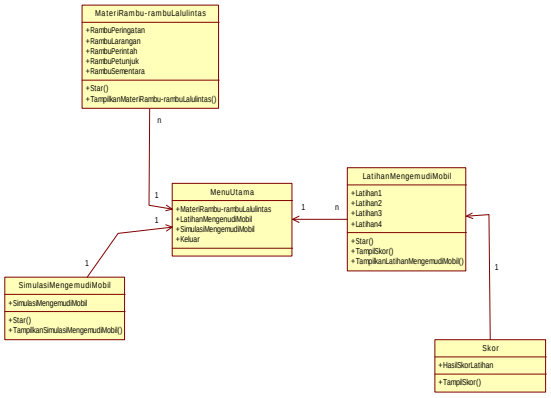


Figure 3 Diagram Class

2.6 System Planning

The design is part of a software development methodology that should be done after going through the stages of analysis. This section will explain the design of the proposed system.

2.6.1 Menu Structure Design

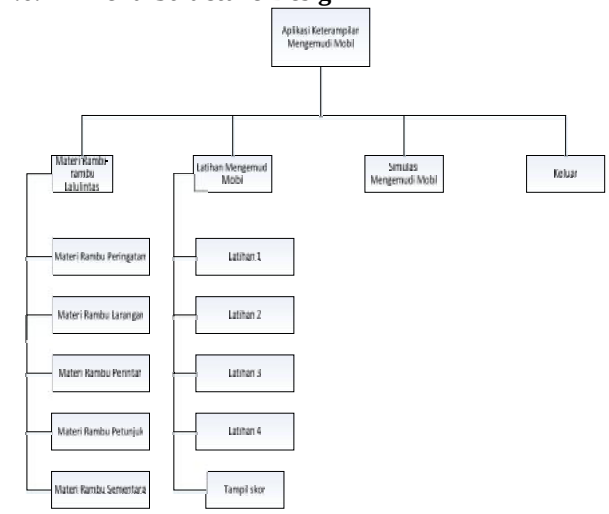


Figure 4 Menu Structure Design

2.6.2 Implementasi Antarmuka

The design of the interface serves to give an overview of the software to be built, in order to further facilitate the creation of the software later.

2.6.2.1 Main Menu Interface Design



Figure 5 Main Menu Interface Design

2.6.2.2 Interface Design of Traffic Signs



Figure 6 Interface Design of Traffic Signs

2.6.2.3 Interface Design Car Driving Training

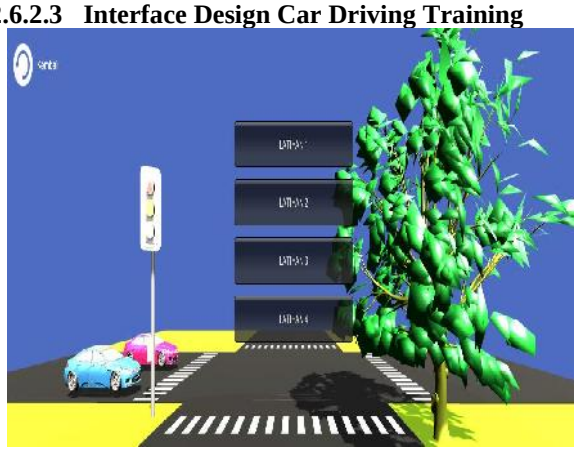


Figure 7 Interface Design Car Driving Training

2.6.2.4 Simulation Exercise



Figure 8 Interface Design Simulation Exercises

2.7 Testing Systems

Implementation is a stage for applying the system design and analysis results. Implementation of Instructional Media Development Skills Car Driving

consists of a hardware implementation, software implementation, application implementation and interface implementation.

Skenario Pengujian Aplikasi

Plan application testing is done in order to test the functional contained in the Application Media Learning Skills Driving a Car.

Table 5 Scenarios Application Testing

Class Test	Test Details	Types of Tests
Material Options Menu Selection of Traffic Signs	The menu selecting materials traffic signs	*Blackbox*
Prohibition Signs Materials Selection	Selection of material signs ban	*Blackbox*
Materials Selection Warning Signs	Election materials warning signs	*Blackbox*
Signs Material Selection Commands	Selection of material signs command	*Blackbox*
Signs Material Selection Guidelines	Material selection guide signs	*Blackbox*
Materials Selection Signs While	While the beacon of the election materials	*Blackbox*
Car Driving Training Menu Selection	Selection menu practice driving a car	*Blackbox*
Selection Exercise 1	Doing exercises 1	*Blackbox*
Selection Exercise 2	Doing exercises 2	*Blackbox*
Selection Exercise 3	Doing exercises 3	*Blackbox*
Selection Exercise 4	Doing exercises 4	*Blackbox*
Car Driving Simulation Menu Selection	Simulate driving a car	*Blackbox*

2.7.3 Cases and Results Test Application

Case to test media applications driving skills learning.

Table 6 Material Testing Menu Selection of Traffic Signs

Cases And Test Results (Normal Data)			
Data Input	**Which are expected**	**Observation**	**Conclusion**
click Menu Material Traffic Signs	Appears View Menu Material selection of Traffic Signs	Can Go To Display Menu Material selection of Traffic Signs	Be accepted

Table 7 Test Menu Exercise Driving Car

Cases And Test Results (Normal Data)			
Data Input	**Which are expected**	**Observation**	**Conclusion**
Click Menu Exercise Driving Car	Appears View Menu Exercise selection Driving a Car	Can Go To display Exercise Driving Car	Be accepted

Table 8 Test Selection Menu options Car Driving Simulation

Cases And Test Results (Normal Data)			
Data Input	**Which are expected**	**Observation**	**Conclusion**
Click Menu Simulation of Driving a Car	Showing display options Car Driving Simulation	Can Log Into Doing View Car Driving Simulation	Be accepted

2.8 TEST RESULT

Testing techniques used in this beta test is a technique Likert scale. For each question on the questionnaire will get a different valuation point.

Table 9 Results Score Item Question Of All Respondents

No. Respondents	Grain / **Item Questions**				
	1	**2**	**3**	**4**	**5**
1	4	5	4	4	5
2	4	4	5	4	4
3	5	4	4	4	5
4	4	4	4	4	4
5	4	4	4	3	3
6	5	5	4	4	5
7	3	4	3	2	4
8	4	3	5	3	2
9	4	5	4	4	5
10	4	4	5	3	3
11	4	4	5	5	5
12	4	5	5	5	4
13	4	3	5	5	4
14	5	4	3	4	4
15	4	3	3	5	5
16	4	4	3	4	4
17	4	3	4	5	4
18	3	4	4	4	5
19	4	4	5	5	4
20	3	4	4	5	4

Based on these data, the steps that can be taken to determine how each respondent attitudes toward learning media application skills of driving a car is

1. Specifies the maximum score, the maximum score obtained by each respondent many times the number of respondents

   5 x 20 = 100
2. Specifies the minimum score, the minimum score obtained by each respondent multiplied by many of the respondents.

   1 x 20 = 20
3. Determining the median value, ie the sum stotal maximum score with a total score of at least halved.

   (100 + 20) : 2 = 60
4. Determining the value of Quartile 1, which is the sum of the median total score of at least halved.

   (20 + 60) : 2 = 40
5. Determining the value Quartile 3, which is the sum of the maximum score with a median split in two.

   (100 + 60) :2 = 80
6. Scale that describes the total score of a minimum, first quartile, median, third quartile and maximum total score



Figure 9 Scores of Reference Questionnaire

Information :

1) Category attitude is very positive, which is the area bounded by the third quartile and maximum score. (Quartile 3 = x = maximum score).
2) Category positive attitude, which is the area bounded by the median and quartiles 3. (Median = x <Quartile 3).
3) Categories negative attitude, which is the area bounded by the first quartile and median. (Quartile 1 = x <Median).
4) Kategori sikap sangat negatif, yaitu daerah yang dibatasi oleh skor minimal dan kuartil 1. (Skor minimal = x < kuartil1).

7. The boundaries of the score for each category of attitude. Based on Figure 9, the range of scores from four categories can be seen in table

Figure 18 Reference Questionnaire Score

Table 10 Range Score

Very Positive Attitude	Quartile 3 ≤ x ≤ Maximum Score	80 ≤ x ≤ 100
Positive attitude	Median ≤ x <Quartile 3	60 ≤ x < 80
Negative attitude	Quartile 1 ≤ x <Median	40 ≤ x < 60
Attitudes Very Negative	Minimum score ≤ x <Quartile 1	20 ≤ x < 40

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusion

Based on the results obtained in this thesis, it can be concluded as follows:

1. Applications Driving Mobile Media Learning Skills can be a supporting tool to enhance the driving potential of the car seen from the attitude of respondents on the question no 1 and 2, which has a very positive attitude category with a total score of 80. This is indicated by a score of No. 1 and 2 are in the same total respondents located in a score of 80 (Kuaril 3), which is the limit score in the category of very positive attitude.
2. Applications Driving Mobile Media Learning Skills can be a supporting tool to enhance the driving potential of the car seen from the attitude of respondents in the category of very positive attitude with a total score of 83. This is shown by the total score of respondents were located between a score of 80 (Kuaril 3) 100 (Maximum), which is the limit score in the category of very positive attitude.3).
3. Applications Driving Mobile Media Learning Skills can be a support tool to overcome the limitations of practical tools seen from the attitude of respondents in the category of very positive attitude with a total score of 165. This is shown by the total score of respondents were located between a score of 160 (Quartile 3) with 200 (Maximum), which is the limit score in the category of very positive attitude.

3.2 Saran

Suggestions for the development of instructional media applications are some suggestions that can be done, among others

1. Create a view that is much more interesting because the applications built is still modest.
2. Can add sound to the material.
3. In the simulation should add another vehicle.

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