# DEVELOPMENT OF SOCIAL SCIENCE LEARNING MEDIA FOR SIXTH GRADE PRIMARY SCHOOL

Christianus Ady Pandapotan Sinaga1, Kania Evita Dewi2

Teknik Informatika-Universitas Komputer Indonesia
Jl. Dipatiukur 112-114 Bandung
Email: christ_ady94@email.unikom.ac.id1, kania.evita.dewi@email.unikom.ac.id2

## ABSTRACT

The purpose of this research is improving the understanding of students in social studies chapter of natural disasters and their prevention. Thus the need for desktop-based learning media using Adobe Flash CS 6. The framework in this study are: collecting data through interviews and questionnaires, the development of software using methods MDLC, testing functionality with Blackbox, interviewing the 6th grade social studies teacher, a questionnaire with students grade 6, to test the hypothesis by using the value of Gain, normality test, Mann Whitney test. From the testing it was concluded that the instructional media can not add to the understanding of students due to the application using the school lab hectic schedule so that students can not continue to open the application.

**Keywords**BPK SDK PENABUR Cimahi, Media Education, MDLC, Adobe Flash CS 6 Normality Test, Mann Whitney.

## 1. INTRODUCTION
### 1.1 Background

After conducting interviews with the 6th grade social studies teacher showed that learning IPS still using lectures and books so as to make not like and do not understand about the learning IPS. In a previous study results note that the value of natural disasters and their prevention chapter to get the lowest score compared to other values. From the results of questionnaires to 60 students showed 75% of students do not like learning social studies, 70% of students do not like the chapter and tackling natural disasters and 78% require props in either chapter. Learning media is an invaluable tool in conveying a message [1]. In hardware medium of learning is something that can be perceived by the human senses in software while learning media is the message conveyed in the hardware. according to the results of survey research institutes and publishing computer is Computer Technology Research (CRT) states that people only remember 20% of the visits and 30% of which to be heard. But people remember 50% of what is seen and heard and 80% of which are seen, heard and done at the same time [2].

Based on research Ade Irma Kusuma and Santi Irawati [3] said that learning media can be used as props as learning with the aim of increasing student understanding. It can also be seen from the research Ani Rosidah [4] and research Dian Novitasari [5] which states that the interactive media can enhance students' understanding of the concept. The purpose of this study is to improve understanding of students in the chapter on natural disasters and prevention.

### 1.2 Research methodology

As a guide in conducting research is needed to look research framework necessary steps in research. And the framework of the research can be seen in Figure 1.



**Picture 1.** Framework Research

Here is an explanation of the steps in the framework of the existing research in Figure 1:
1.      Data collection
To identify problems do interviews to the 6th grade social studies teacher Dra. Dwi Suryanti to know the problems in learning social studies and questionnaires to 60 students of class 6b and 6c.

Once that is done the literature on similar studies obtained in journals, books, etc.

2.    Software Development

Development is based on a multimedia stage six steps, namely the concept, design, material collecting, assembly, testing, and distribution [6].

a.    Concept

The concept of this research is to create a learning media addressed to the 6th grade to increase the students' understanding of natural disasters and their prevention chapter.

b.    Design

Design is done by making an in-app gameplay.

c.    Collecting material

At this stage, teaching materials / learning materials obtained from interviews to the social studies teacher grade 6 in accordance with the social studies lesson plans, as well as searching the literature material from books and journals are similar.

d.    assembly

At this stage of the application development process using Adobe Flash CS 6.

e.    testing

Testing is done by checking the functionality of the application using the Blackbox, and conduct questionnaires to students in grade 6 to see whether the application can help improve understanding or not.

f.    distribution

At this stage in the media CD burning application for a given school and dilkaukan test whether the application can run or not to repair if something goes wrong. Stages of software development can be seen in Figure 2.
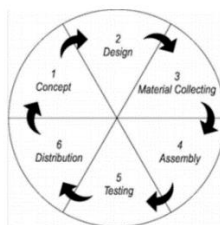


**Figure 2. Multimedia Development Life Cycle Model**

3.    examination

At this stage of the testing functionality with blackbox and to test hypotheses with normality test and Mann Whitney test.

4.    Withdrawal    Conclusions    and Recommendations

At this stage contains a conclusion that has been done and provide suggestions for the future.

## 2. RESEARCH CONTENT

### 2.1  Problem analysis

After the process of problem identification are obtained problem is the lack of understanding of the student chapter and prevention of natural disasters, it is seen from the value of the second chapter lowest among the other chapters. According to the 6th grade teacher learning today still use lecture and book that makes students less interested and do not understand about learning, it needs a learning tool that can improve the understanding of students in IPS.

### 2.2  System Architecture

The system architecture is a way to explain in more detail the components [7]. Images of system architecture can be seen in Figure 3.
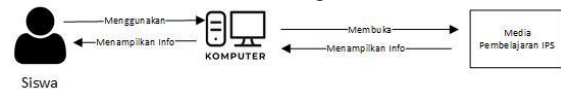


**Figure 3.** System Architecture

### 2.3  Software Requirements Specification

### 2.3.1  Software Requirements Specification Non-Functional

Specifications of non-functional software requirements can be seen in Table 1.

**Table 1.** Software Requirements Specification Non-Functional

| Nomor | Spesifikasi Kebutuhan Non Fungsional |
|---|---|
| SKPL-NF01 | Sistem yang dibangun menggunakan spesifikasi perangkat keras yang memenuhi standar minimum yang diperlukan |
| SKPL-NF02 | Sistem yang berjalan harus pada spesifikasi perangkat lunak minimum yang diperlukan. |
| SKPL-NF03 | Sistem dapat digunakan pada pengguna yang dianjurkan. |

### 2.3.2  Software  Requirements  Specification Functional

Specifications of non-functional software requirements can be seen in Table 2.

**Table 2.** Software Requirements Specification Functional

| Nomor | Spesifikasi Kebutuhan Fungsional |
|---|---|
| SKPL-F01 | Aplikasi dapat menampilkan materi yang terdiri dari teks dan foto |
| SKPL-F02 | Aplikasi dapat menampilkan video yang berekstensi flv |
| SKPL-F03 | Aplikasi dapat menampilkan soal-soal latihan |
| SKPL-F04 | Aplikasi dapat menampilkan permainan puzzle |
| SKPL-F05 | Aplikasi dapat menampilkan informasi tentang |

### 2.4   System planning

Specification process is a description of each element of the process is contained in the program, which includes the name of the process, input, output, and a description of the process,

### 2.4.1  diagram Context

Context diagram is a diagram of the highest in the Data Flow Diagram that only one process [8]. The following diagram IPS context of instructional media, can be seen in Figure 4.
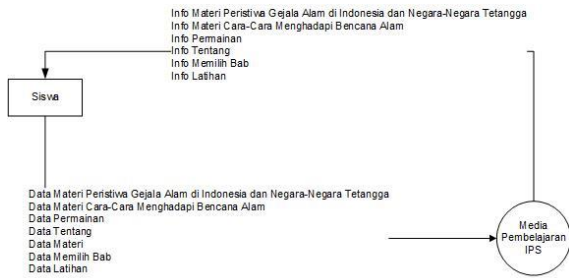
Info Materi Peristiwa Gejala Alam di Indonesia dan Negara-Negara Tetangga
Info Materi Cara-Cara Menghadapi Bencana Alam
Info Permainan
Info Tentang
Info Memilih Bab
Info Latihan

Siswa

Data Materi Peristiwa Gejala Alam di Indonesia dan Negara-Negara Tetangga
Data Materi Cara-Cara Menghadapi Bencana Alam
Data Permainan
Data Tentang
Data Materi
Data Memilih Bab
Data Latihan

Media Pembelajaran IPS

**Figure 4. Diagram Context**

### 2.4.2    Interface Design

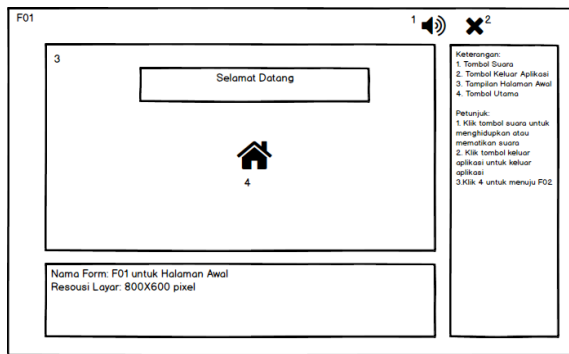Home page interface design application IPS learning media can be seen in Figure 5.



**Figure 5.** Interface Home

The design of the main page interface IPS learning media can be seen in Figure 6.
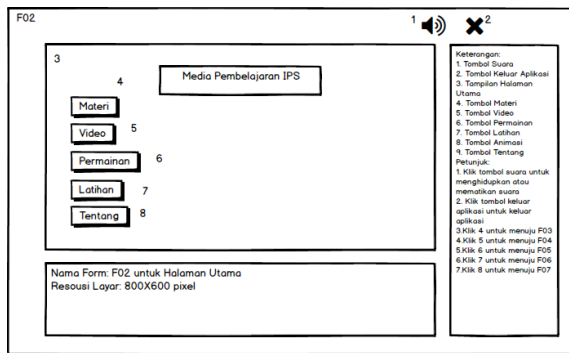


**Figure 6.** Interface Home

Page interface design game IPS learning media can be seen in Figure 7.
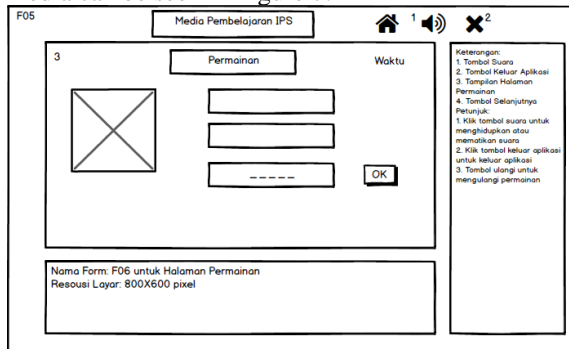


**Figure 7.** Interface Page Games

### 2.4.3    Design Semantics

Home page interface design application IPS learning media can be seen in Figure 8.
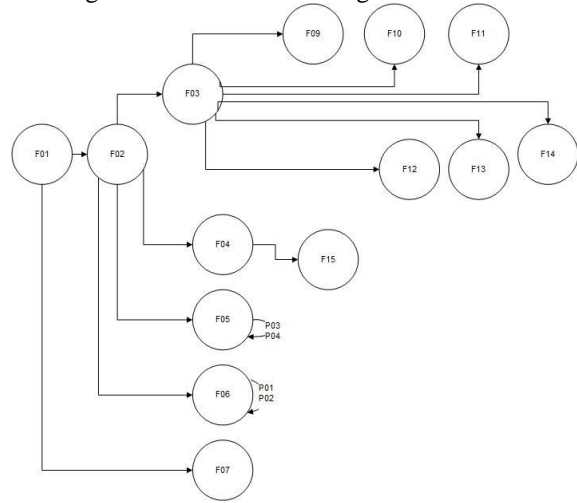


**Figure 8.** Semantic network

### 2.5    Hypothesis Testing

Hypothesis testing is done by making the test statistics with conclusions from these results. This test using the SPSS application is a special application for analyzing statistical data [9]

### 2.6    Testing Gain

Tests conducted to determine the gain is the difference between the value *pre-test* with value *pro-test. Descriptives* of value *gain* can be seen in Table 3.

**Table 3.** *Descriptives Gain*

**Descriptive Statistics**

|  | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| NGain_Persen | 60 | 9.52 | 92.50 | 33.2038 | 18.42587 |
| Valid N (listwise) | 60 | | | | |

### 2.7    Testing Normality

Normality test is used to determine whether the data is normally distributed or not [10].

### 2.7.1    Normality Testing Class 6b

Normality Testing Class 6b hypothesis:
1. Ho: The data were normally distributed 6b class values
2. H1: Data values are not normally distributed 6b class

Test criteria: H0 is rejected if sig <0.05
The results are shown in Table 4.

**Table 4.** Results The Class Normality 6b

**One-Sample Kolmogorov-Smirnov Test**

| | | Nilai Pretes |
|---|---|---|
| N | | 34 |
| Normal Parameters[a,b] | Mean | .2310 |
| | Std. Deviation | .10368 |
| Most Extreme Differences | Absolute | .087 |
| | Positive | .074 |
| | Negative | -.087 |
| Test Statistic | | .087 |
| Asymp. Sig. (2-tailed) | | .200[c,d] |

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Based on the above hasl obtained test results of 0.2 greater than 0.05, then according to the decision making normality test showed normal distributed data.

### 2.7.2 Normality Testing Class 6c
hypothesis:
1. H0: 6c class normally distributed data
2. H1: data were not normally distributed 6c class

Test criteria: H0 is rejected jiga sig <0.05
The results are shown in Table 5.

**Table 5.** The results of normality Value class 6

**One-Sample Kolmogorov-Smirnov Test**

| | | Nilai Pretest |
|---|---|---|
| N | | 26 |
| Normal Parameters[a,b] | Mean | .3079 |
| | Std. Deviation | .16893 |
| Most Extreme Differences | Absolute | .173 |
| | Positive | .173 |
| | Negative | -.104 |
| Test Statistic | | .173 |
| Asymp. Sig. (2-tailed) | | .043[c] |

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Based on the above hasl test results obtained amounted to 0.043 smaller than 0.05, then according to the decision making normality test showed the data were not normally distributed.

### 2.8 Mann Whitney Testing
hypothesis:
1. Ho: There are different classes of data 6b to 6c

2. H1: There is no difference in class data 6b to 6c

Test criteria: H0 is rejected jiga sig> 0.05
The results are shown in Table 6.

**Table 6.** Results The Mann Whitney

**Test Statistics[a]**

| | Hasil Belajar IPS |
|---|---|
| Mann-Whitney U | 347.500 |
| Wilcoxon W | 942.500 |
| Z | -1.412 |
| Asymp. Sig. (2-tailed) | .158 |

a. Grouping Variable: Kelas

Based on the above hasl test results obtained for 0.158 greater than 0.05, according to Mann Whitney test decision making no distinction between classes 6b as a control class with 6c as an experimental class.

### 2.8.1 Interview Testing
Testing interviews were conducted with grade teacher 6. The results of the interviews can be seen in Table 7.

**Table 7.** Questionnaire Results

| No. | Question | answer |
|---|---|---|
| 1 | Is this IPS learning media application to attract the attention of students? | Yes, with sound, video and game depat attract students |
| 2 | Is IPS learning media application is in conformity with the social studies lesson on the CPC SDK PENABUR Cimahi? | Yes, I think in terms of material and exercises. This application is in conformity with the social studies lesson on the CPC SDK PENABUR CIMAHI and help students to maenjelaskan existing materials |
| 3 | Does the IPS learning media | I think the media can |

| Question | | |
|---|---|---|
| can enhance students' understanding? | enhance students' learning social studies in a way consolidate the concepts learned earlier. | |

### 2.8.2 Questionnaire Testing

Testing questionnaire was conducted to see how the students about social studies learning media application that can be seen in Table 8.

**Table 8.** Questionnaire Results

| Question | Σ Yes | Σ Not |
|---|---|---|
| 1. With my instructional media more interested in learning about social studies | 40 | 20 |
| 2. With the media more aware of my learning about the IPS material and prevention of natural disasters | 45 | 15 |
| 3. With instructional media provide convenience as an interactive learning tool for social studies | 52 | 8 |
| Total Σ Yes | 137 | |

From the table it is obtained:

$$p = \frac{f}{n} * 100\%$$

$$p = \frac{137}{180} * 100\% = 76\%$$

Thus be concluded that most helped by the media that can increase interest and as a tool for students.

## 3  CLOSING

### 3.1 Discussion

After a test conducted found that the results of the testing Blackbox application functionality to run smoothly and in accordance with the test item. Then through testing to grade 6 teacher interviews showed that the application of instructional media are in accordance with the CPC SDK learning PENABUR IPS in Cimahi and conducted interviews to get the student to feel through the medium of learning. After testing the hypothesis through Gain values, normality test and Mann Whitney test showed that the control class ips value equal to the experimental class so note that the IPS learning media can not increase the students' understanding of natural disasters and their prevention chapter.

### 3.1 Conclusion

Based on the results obtained in this thesis, it can be concluded with the IPS instructional media Class 6 SD then it can improve students' understanding of the media because they use desktop application at the school lab hectic schedule so that students can not continue to open the application.

### 3.1 Suggestions

Suggestions for the development of social studies learning media, among others:
1. The addition of matter and about the material that covers two semesters.
2. Using other like android-based media, web.

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