Media Development on the Concept Sentence Learning Model based Android for Students with Hearing Impairment

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Abstract. This study aims to find out development of android based learning media that adopts the Concept Sentence model for students with hearing impairment, so that their learning outcomes, especially in understanding a social science’s learning materials would increase. The subjects of the study were 30 students from one of the special schools for students with hearing impairment in Surakarta City. The present study was conducted using a research and development method. The data were collected using a questionnaire while Miles and Huberman model of Analysis was employed for the data analysis. The results show that most of the students consider that they had difficulty in understanding the board material of social science, due to the inadequateness of the previous media. The students need a media that come with the required competence to be achieved, clearly and briefly delivered using words and punctuations that can be easily understood by the students. The students wish for an interesting media display and most of them assent on the use of “Belajar IPS itu Asyik dan Menyenangkan” as the title on the learning media’s homepage.

1. Introduction

Every citizen has the right to get a decent education including students with hearing impairment. As written in the 1945 Constitution Article 31 paragraph (1) which reads: ”(1) Every citizen has the right to receive s education and Law Number 20 of 2003 concerning the National Education System Article 5 paragraph (1) and (2) which reads:" (1) Every citizen has the same right to obtain quality education. (2) Citizens who have physical, emotional, mental, intellectual, and/or social disorders are entitled to special education including students with hearing impairment. According to Gargiulo (2012, p.397), hearing impairment or deafness is a term that used to describe hearing disorders that relate to a certain aspect ranging from mild to very severe. Meanwhile, Mangunsong (2014, p. 81) explains that students with hearing impairment are those whose hearings are not properly function, need special services.

The forfeit of hearing ability has some impacts on the students with hearing impairment's capability in vocabulary mastery, and difficulty in language and communication. The students' abstract language...
Skill does not relate to their age and hearing level like their reading comprehension does. This correlation is not strong enough for figurative language knowledge to appear to be an important predictor of reading comprehension level (Giang and Inho, 2015). They have difficulties in understanding the material in the form of linguistics and social sciences (Wardani, 2011, p. 5.18–5.22).

The students with hearing impairments' level of reading comprehension are not merely related to their level of hearing loss but also depends on their parents hearing ability (Vitova, Zdrazilova, and Jezkova, 2014). The board materials and vocabularies in social sciences' learning has an impact on the students' learning outcomes. Learning outcomes are certain competencies or abilities such as cognitive, affective, or psychomotor which acquired and mastered by the students after participating in the teaching and learning process (Kunandar, 2013, p. 62).

The students' lack of ability can be optimized by applying the appropriate learning media. Students with hearing impairment need a learning media that can increase their verbal ability so that they can easily understand the learning materials and at the same time improve their social science learning outcomes. Android application based Concept Sentence learning model which adapted from the conventional Concept Sentence learning model is an appropriate media to overcome the current problems faced by the students with hearing impairment. The students' shortage can be optimized through the use of proper learning media. Moreover, it must be supported by the decent learning method and place (Antonanzas and Lorente, 2017). The media is presented to create an interesting learning process in order to achieve learning purposes (Aminah, Kamsiyati, and Poerwanti, 2017).

The use of Android applications is in line with the current era development so that the students with hearing impairment would be more interested in developing their verbal ability since these applications are provided with various features (Popa, Grigore, and Velican, 2013). Ngalimun (2016, p. 245) suggests that Concept Sentence in a model that begins with the delivery of learning competencies, material presentation, arranging some heterogeneous groups, presenting some important keywords, and group assignments, later the students are asked to present their learning outcomes alternately in front of the class.

Concept Sentence learning model can be applied on the students with hearing impairment because it can help them in understanding a certain material by presenting the keywords in every material. Guediche, et al (2016), states that some words that represent the concept of the sentence will evoke one's perception in understanding the sentence, if there are some words changing, the different perception will eventually evoke as well. While Tanaka, et al (2011) in their study say that the word order on a few keywords in a sentence influence the perception upon a certain sentence, thus the keywords used should represent something that will be conveyed.

Background study above has revealed that the Concept Sentence learning model is a proper media to overcome the students with hearing impairments' problem in learning as this model can develop their verbal ability. However, unfortunately, this model has not been presented in an interesting way, thus it is necessary to develop learning media that adopt the concept of Concept Sentence learning model for the researcher to be able to develop a media which meet the students' needs. Therefore, the students learning outcomes will improve, particularly their understanding in social science subjects.

2. Method

The research subjects were 30 students from one of the Special Schools for Students with Hearing Impairment in Surakarta City which consist of 30 students, 6 students of VII grade, 12 students of VIII grade and 12 students of IX grade. The research and development method was used for this study since the main aim of this method is to develop a particular product and to testify to the effectiveness of the product. The data were collected using a questionnaire about the students' needs for a media on the Concept Sentence learning model.

Data analysis technique used in this study was the Interactive Model Analysis proposed by Miles and Huberman. This model of analysis consists of three components, which are data reduction, data presentation, and drawing a conclusion. On the data reduction stage, the researcher collected information concerning the students' needs for the media on the Concept Sentence learning model on the subject of Social Science. On the next stage of the data presentation, the data were presented in the
descriptive form based on the collected data. And the last stage is drawing a conclusion where the data from the two previous stages were verified, the data that are constant as the previously collected data from the preliminary research were then used for drawing the conclusion.

3. Results and Discussion
Based on the data collection students with hearing impairment for the media on the Concept Sentence learning model, the results are described in the Table 1 below:

| Aspect                                      | Indicator                             | Answer choice          | Student answer | Percent (%) |
|---------------------------------------------|---------------------------------------|------------------------|----------------|-------------|
| A preliminary understanding of learning lessons | Response to social studies            | A-Very difficult       | 6              | 20          |
|                                             |                                       | B-Difficult            | 16             | 53,3        |
|                                             |                                       | C-It’s not difficult   | 8              | 26,7        |
| The need for learning media                 | Availability of media                | A-Already adequate     | 5              | 16,7        |
|                                             |                                       | B-Insufficient         | 16             | 53,3        |
|                                             |                                       | C-Inadequate           | 9              | 30          |
| Response to the media                       | A-Absolutely agree                    | 9                      | 30             |
|                                             | B-Agree                               | 16                     | 53,3           |
|                                             | C-Less agree                          | 5                      | 16,7           |
| The need for content or material in social studies learning | Submission of competency | A-Very necessary       | 10             | 33,3        |
|                                             |                                       | B-Need                 | 16             | 53,3        |
|                                             |                                       | C-No need              | 4              | 13,3        |
| How to deliver the material                 | A-Brief and clear                     | 19                     | 63,3           |
|                                             | B-Clear description                   | 9                      | 30             |
|                                             | C-Other answers                       | 2                      | 6,7            |
| The word writing                            | A-Idealist                            | 5                      | 16,7           |
|                                             | B-Easy to understand                  | 18                     | 60             |
|                                             | C-Anything doesn't matter             | 7                      | 23,3           |
| The use of punctuation                      | A-In accordance with the context      | 4                      | 13,3           |
|                                             | B-clear                               | 17                     | 56,7           |
|                                             | C-Normal                              | 9                      | 30             |
| Media Evaluation                            | A-multiple choice                     | 16                     | 53,3           |
|                                             | B Really wrong                        | 11                     | 36,7           |
|                                             | C-Description                         | 3                      | 10             |
| Display media                               | Color Display                         | A-Bright colors        | 17             | 56,7        |
|                                             | B-Dark colors                         | 13                     | 43,3           |
|                                             | C-Another answer                      | 0                      | 0              |
| The use of animated images                  | A-Very necessary                      | 10                     | 33,3           |
|                                             | B-Need                                | 14                     | 46,7           |
|                                             | C-No need                             | 6                      | 20             |
| Font Type                                   | A-Comic sans ms                       | 16                     | 53,3           |
|                                             | B-Tahoma                              | 8                      | 26,7           |
|                                             | C-Times new roman                     | 6                      | 20             |
| Media Background                            | A-Nature                              | 8                      | 26,7           |
|                                             | B-Social                              | 16                     | 53,3           |
|                                             | C-Animals/Plants                      | 6                      | 20             |
| Procurement of instructions menu            | A-Very necessary                      | 6                      | 20             |
|                                             | B-Need                                | 14                     | 46,7           |
|                                             | C-No need                             | 10                     | 33,3           |
| Learning media homepage                     | The title of the homepage             | A-Ayo, belajar IPS bersamaku! | 6                | 20          |
|                                             |                                       | B-Belajar IPS itu asyik dan menyenangkan | 19                | 63,3        |
|                                             |                                       | C-Belajar IPS itu tidak  | 5              | 16,7        |
The highest results of the analysis can be seen more clearly on Figure. 1 below:

![A need analysis of media development](image)

**Figure 1.** Media development based android

According to the analysis on the students with hearing impairment needs of the media on the Concept Sentence learning model, the students feel that social science learning is difficult. The availability of media in the social science learning process is still considered inadequate so that the development of instructional media is needed to accommodate the students' needs in learning. The students agree on the use of the newly developed learning media to be applied in learning social science which is Android Application Based Concept Sentence learning model. In this learning model, the learning competencies must be conveyed so that the students will have the knowledge of the subject which is about to be learned. The learning materials are delivered concisely, briefly, and interestingly to ease the students understanding of the subjects. The students with hearing impairment love to use the Word Writing technique on the easy to understand learning media. The use of punctuation must be clear as well. Evaluation of the learning media is constructed in the form of multiple choice questions.

Using the bright colors for the media screen display. Images and animations can make the learning media display more appealing. Comic san MS font type is considered as an attractive one to be used for the learning media. Social theme background for the learning media is loved the most by the students. User guide and help menu are also need to be included on the learning media. Meanwhile, from several titles for the learning media homepage offered, the title “Belajar IPS itu Asyik dan Menyenangkan!” is the one which according to the students is the most suitable to be used.

4. **Conclusion**

The board material of social science required an adequate understanding which makes most of the students find social science is hard to be learned. For this reason, they agree on the establishment of a new learning media because the previous one was considered inadequate. The students need a media that accompanied by the description of learning competencies, delivered concisely and briefly using the easy to understand words and clear punctuations as well as evaluation in the form of multiple choice. Students with hearing impairment want the learning media to use the bright colors, a social theme for the background display, use Comic San MS as the font type, and designed with images and animations. Meanwhile, from several titles for the learning media homepage offered, the title “Belajar IPS itu Asyik dan Menyenangkan!” is the one which according to the students is the most suitable to be used.
IPS itu Asyik dan Menyenangkan!” is the one which according to the students is the most suitable to be used.

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