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Developing Learning Media For Deaf Students Of SMPLB Muhammadiyah Jombang: Siaga (Speaking Skill Games)

Ulfa Wulan Agustina¹, Tri Pujiani^{2*}, Nurul Afidah³, Cici Nur Mufida⁴

^{1,3,4}Universitas KH A Wahab Hasbullah, Jombang – Indonesia

²Universitas Harapan Bangsa, Purwokerto - Indonesia

tripujiani@uhb.ac.id

Abstract

This study focuses on developing a learning medium using PowerPoint called SIAGA (Speaking Skills Games) to enhance the speaking skills in English of grade-eight deaf students at SMPLB Muhammadiyah Jombang. Considering that speaking is an important skill in communication, the research addresses the unique challenges faced by deaf students, such as delayed language development and reliance on visual learning. Utilizing R&D Method with ADDIE design, some concepts of gamification were combined with visual aids, animations, and sign language in this learning module to better respond to the needs of Deaf students. The application SIAGA was developed through consultation with experts, and then it went through validation procedures by media, language, and disability specialists. From these, the feedback about the relevance was 95% and that on media design was 79%, suggesting the need to improve the visuals, font readability, and clarity in instructions. In sum, post-implementation evaluations through student questionnaires averaged 89% regarding the effectiveness, ease of use, and motivational effect of the application. Application research in inclusive classrooms involving both deaf and hearing students would be valuable for further study of this medium.

Keywords: *SIAGA; speaking skills; games; deaf student*

A. Introduction

Worldwide, people use English extensively. Almost all people use English for their daily activities, education, work, and many professions, such as pharmacists and businessmen. Therefore, fluency in English is crucial. But many people still have difficulty speaking English well. This issue is particularly prevalent in Indonesia, where English is considered a foreign language. Although learning English is crucial, daily activities do not require it.

Speaking is a means of communicating with others; it becomes a process of sharing. According to the definition, speaking not only allows us to share our ideas through oral communication, but it also allows us to express our feelings even when we are just speaking (Alrajafi et al., 2022). So, the student should study hard for speaking skills.

In this case, particularly in the learning process, there is a difference between an ordinary formal school and an extraordinary school. This distinction extends to all academic subjects, not just language. A special school's learning methodology must adapt to its students' needs and prioritize them.

A study concludes that teaching children with special needs encompasses communication skills (Fardila, 2018). The teacher should concentrate on their weaknesses and provide them with effective instruction. International standards agree that teachers must be able to teach deaf students how to communicate using sign language (Bahasa isyarat) and body movements. Deaf students tend to focus more on visual learning methods.

The types of identification of deaf students include being unable to hear, having delayed language development, having fewer gestures in communication, or not responding when speaking (Zaleski, 2023). Based on these identifications, we can conclude that deaf students need to improve their speaking skills in order to effectively communicate with others.

For this reason, the researchers developed a learning media named “SIAGA (Speaking Skills Games) to facilitate deaf students in learning English, especially for speaking skills development. The researchers conducted a study entitled “Developing Learning Media for Deaf Students of SMPLB Muhammadiyah Jombang: SIAGA (Speaking Skill Games)” to assist students learning English in understanding speaking skills through PowerPoint-based games.

Speaking Skills

Speaking is important for all of the people to share their feelings and ideas. Speaking is an interactive activity that involves creating meaning with others through the production and acquisition of information from various media (Parmawati & Inayah, 2019). Speaking is become a process to create and share meaning in contexts that used both, verbal and non-verbal symbols (Arifin et al., 2014). The students, from both public and special schools, use speaking skills to discuss various topics and learn new lessons every day. Speaking ability also esases them to socialize and interact with anyone.

Learning Media

According to Egerton (2011), learning media serves as a medium that facilitates the transmission of instructional messages or learning information. Media is a means of expressing messages and information. Learning media not only aids students in acquiring information or instruction, but also enhances the efficiency and interest of the learning process, ensuring that both the teacher and students achieve their learning objectives.

Deaf Students

People with hearing impairment or deaf are individuals who suffer from a hearing disorder, making it difficult for them to perceive sounds (WHO, 2024). Deafness are classified into several types, sensorineural, conductive, and mixed deafness. Therefore, it is a common misconception

that deaf students cannot hear anything at all. Despite their hearing limitation, deaf students can still enhance their hearing abilities through trainings, therapies or by utilizing hearing aids.

Apgar (1996) asserted that individuals hindered in their ability to comprehend oral speech due to a birth defect or specific nerve fracture should benefit from hearing aids. Furthermore, (Sukrisna et al., 2018) state that a slight impairment in hearing has an impact on the language development of students.

Games

Games are highly valuable and vital technique to stimulate language acquisition in fun way. Games serve as a framework for competition, rules, and enjoyment (Barr, 2017; Mee et al., 2022). The process of applying game components to situations that are not gaming, such as education, is called gamification (Iaremenko, 2017; Khaleel et al., 2020). Many researchers and practitioners believe that games have great educational value by providing students with a fun and stress-free learning environment (Iaremenko, 2017; Licorish et al., 2017; Nikmah, 2020; Yu & Gao, 2020). Therefore, teachers are suggested to utilize media such as games to engage students in learning and foster effective communication (Alamdard, 2016; Sukmawati & Pujiani, 2023). Games help the teacher deliver or use the language within context to be meaningful and useful. The elements of games like scoring, reward, and winners podium create a sense of competitiveness (Gao & Lin, 2023; Iaremenko, 2017). It also motivates the students to engage and finish the game resulting in understanding the materials covered in the games.

SIAGA (Speaking Skills Games)

SIAGA (Speaking Skills Games) is an application designed as a medium of learning for deaf students that focuses on speaking skills. This medium covers various words, vocabulary, and sentences about greetings for eighth-grade deaf students of SMPLB Muhammadiyah Jombang. The

SIAGA application was created by utilizing the features of PowerPoint like animations and hyperlink to make the game more interesting and alive. This medium aims to help deaf students learn English more easily and interactively, especially in enhancing their speaking skill.

B. Methods

This study used Research and Development (R&D) as the research method. R&D is a systematic process that includes iterative creation, testing, and refinement, using a sequence of techniques for the creation and evaluation of educational products; these include curricular models, teaching strategies, and learning tools (Gall et al., 2007). There are many models of R&D such as ADDIE (Analyse, Design, Development, Implementation, and Evaluation)(Branch, 2009), 4D (Definition, Design, Development, Disseminating) (Gorbi Irawan et al., 2018), ASSURE (Analyse, State, Select, Utilise, Require, and Evaluate) (Abdullahi, 2015), and Dick and Carey (Friedman & Schneider, 2018). Among these models, ADDIE is the best suitable for this research. The subject of this research were 8th grade students from SMPLB Muhammadiyah Jombang with hearing impairment or deaf. Qualitative data were obtained through questionnaires and interviews. The medium was validated by the media experts, English language experts, and disability experts. Once the media was ready, it was tried out in the class with guidance from the teachers. To get the feedback from the users, questionnaires and interviews were conducted to the students. Then, the data obtained were analysed by using thematic analysis which includes coding, identification, classification, and interpreting the data (Cohen et al., 2007).

C. Result

In the analysis phase, the researchers distributed questionnaires to the students to obtain their perspectives on English learning and its obstacles. From the questionnaire result, it was found that the students basically like learning English but they had difficulties in understanding the new vocabularies impacted in their low speaking skills. Regarding the learning method, the students preferred learning through games, and sign language (bahasa isyarat) is used as the medium of instruction. Based on this data, the researchers concluded that a media that can facilitate them to learn English by using gamification is needed.

Hence, the researchers designed the media named SIAGA (Speaking Skills Games). First, the researchers chose one topic from the syllabus and identified the learning objectives. Second, the instructional procedure was planned as well as the outline of the games. Third, the plan was consulted to the language experts and the teachers. Finally, the design was revised based on the feedback obtained.

In the development stage, the researchers developed the materials and transformed them into games by using PowerPoint. The process included the design of the illustration, inserting the content, and applying the animation and other effects. Once the media was ready, it was validated by media experts, language experts, and disability experts. The instruments used were questionnaires in the form of Likert-scale and interviews. Then, the result was categorized into percentage as follows:

Table 1. Questionnaire Scale Categorization	
PERCENTAGE SCORE	CATEGORY
81% - 100%	Very good
61% - 80%	Good
41% - 60%	Fair
21% - 40%	Poor
≤ 20%	Very poor

The questionnaires for language experts and disability experts were the same since both evaluate the content and its practicability to meet the students' need. Table 2 presents the results as follows:

Table 2. Language and Disability Experts Questionnaire Result

No.	ASPECTS	SCORE
1.	Relevance	28
2.	Accuracy	10
3.	Completeness of presentation	4
4.	Basic concept of material	10
5.	The suitability of the presentation with the demands of students centered learning	19
SUM		71
TOTAL		95%

The media experts evaluated the quality of the media and its component. Following is the result of media expert questionnaire.

Table 3. Media Expert Questionnaire Result

No.	ASPECTS	SCORE
1.	Layout Design/ Layout	9
2.	Text/ Typography	10
3.	Image	23
4.	Audio	4
5.	Packing	9
6.	Use	8
7.	Navigation	4
SUM		67
TOTAL		79%

Despite of the questionnaire, interviews were conducted to complete the data and clarify the experts' perspectives on the media developed. According to the language and disability expert, the media need revisions in terms of the need some effects as the feedback signs of students' response,

whether it is correct or incorrect, the sound cues to train the students on how to pronounce the words, and more vocabulary contents.

While from the media experts, some suggestions were given related to the color and instructions. The contrast of the colour was too dark and the font needs to be changed to make it more readable. In addition, clear and adequate instructions were needed to ensure the students understand how to play the games.

The media, then, was revised based on the feedbacks from the experts. Following is the final product of the media.



Figure 1. The first slide or display media
SIAGA



Figure 2. The display of main menu of
SIAGA



Figure 3. The display part of material



Figure 4. The display part of level of
games



Figure 5. The goals of SIAGA application



Figure 6. The basic competency of learning process



Figure 7. The Alphabet material of first level games



Figure 8. The Vocabulary Material of second level games

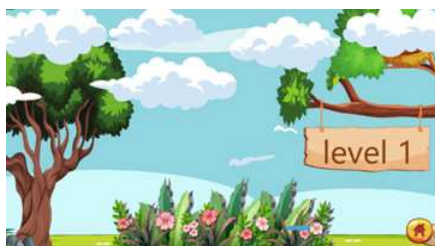


Figure 9. The Material Greetings expression of third level games

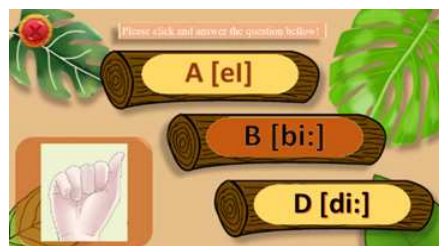


Figure 10. The display of first level games



Figure 11. The display first games of SIAGA about sign language



Figure 12. The display of second level games



Figure 13. The display of end the games

Once it was ready, the media was implemented in the classroom to teach English for deaf students at SMPLB Muhammadiyah Jombang. At the end of the class, the effectiveness of the media was evaluated by using questionnaires. The questionnaires were distributed to the students. Following is the summary result of the questionnaire.

Table 4. The Result of Students' Questionnaire

NO.	Description	Questionnaire Score
1.	Is the design in the SIAGA application (speaking skill games) interesting for learning?	100
2.	Is the use of the SIAGA application (speaking skill games) very easy to understand?	100
3.	Are the games in the SIAGA application (speaking skill games) very interesting?	83
4.	Can games in the SIAGA application (speaking skill games) support speaking learning?	83
5.	Is the material presented in the SIAGA application (speaking skill games) easy to understand?	83
6.	Can the SIAGA (speaking skill games) application increase enthusiasm and motivation in learning speaking?	83
7.	Are the models, shapes, and font sizes used in the SIAGA (speaking skill games) application simple and easy to read?	92
8.	Is the material presented in accordance with the lessons that must be in class?	100
9.	Are you interested in the SIAGA application (speaking skill games) in learning speaking?	83

10.	Can this SIAGA (speaking skill games) application give you the opportunity to communicate with other friends?	83
SUM		892
Average		89

D. Discussion

This study focuses on the development of PowerPoint game-based media aiming to enhance the special needs of deaf students in learning English speaking skills. Utilizing R&D with ADDIE design, the media was validated by the material experts, and media experts. The media namely SIAGA was implemented at 8th grade students of SMPLB Muhammadiyah Jombang.

Score given by the language and disability was 95. It means that the media developed was very good, although there were several points to revise such as the effects, sound cues, and vocabulary. Meanwhile, the score obtained from media expert was 79. It means that the media was good. Some improvements were needed in terms of the color and instructions. Then, the voice from the students showed that they liked the media and it was effective in facilitating their speaking skills development with the score given was 89.

The positive attitude from the experts and the students indicated that the media is well-developed and effective in fulfilling the students' special need. Jamili (2016) confirmed that when being explored, PowerPoint media can be enhanced by adapting the presentation to the unique needs of students and their learning styles. In this study, the PowerPoint was adjusted to the needs of deaf students by providing the sound cues using hand gestures. Indeed, teaching speaking skill to deaf students requires special treatments like lip reading, counting syllables, adding transcription, and mixing language (Sukrisna et al., 2018).

The students' enthusiasm in playing the games proved that the use of games not only increase the students' learning outcome but also the students' engagement and motivation. This is in line with the previous research by Sukmawati and Pujiani (2023) that gamification can enhance the classroom engagement leading to the increase of the learning outcome. Additionally, the multimedia elements makes the materials presented more accessible and understandable for deaf students (Astuti et al., 2022).

To sum up, SIAGA, a PowerPoint game-based media, was well-developed and meet the unique needs of deaf students. It contained multimedia components that facilitate the students to improve their speaking skills. Its effectiveness was seen from the students enthusiasm, active participation and involvement in the learning process.

E. Conclusion

In conclusion, the research successfully created a game media, SIAGA, based on Power Point, which enhanced speaking in English among deaf students. Validation from media and material expert, and students' responses prove it is acceptable and effective regarding the specific needs of its targeted audiences. It showed that making multimedia tools specific for special needs learners will incorporate hand gesture, transcription, and other forms of visual cue to ensure its accessibility and engaging.

Future research might examine the application of SIAGA in a large and diverse population to extend generalizability. Application research in inclusive classrooms composed of both deaf and hearing students or examining the role of parental support when using game-based media would also be very valuable to further improve special needs education.

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