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Needs Analysis Study of Blended Learning Model to Improve Communication for Students with Hearing Impairment

Studi Analisis Kebutuhan Model Pembelajaran Blended Learning untuk Meningkatkan Komunikasi Siswa dengan Gangguan Pendengaran

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This study aims to analyze the need to develop a blended learning model that can enhance and facilitate students with hearing impairment communication in learning. Because of their barriers, students with hearing loss have challenges in developing communication skills. So educational institutes must implement a learning model that accommodates their demand. This research covered a needs analysis to identify the problems and challenges faced by deaf students in communication and analyze their perspectives and expectations of appropriate learning models. The study involved five students with hearing barriers enrolled in college. Data was collected through qualitative approaches. According to research, a blended learning model must be established that considers the demands of deaf students for them to adapt communication in their learning.

Keywords: blended learning, communication skill, hearing impairment

Penelitian ini bertujuan untuk menganalisis kebutuhan untuk mengembangkan model pembelajaran blended learning yang dapat meningkatkan dan memfasilitasi komunikasi siswa dengan gangguan pendengaran dalam pembelajaran. Karena hambatan yang mereka miliki, siswa dengan gangguan pendengaran memiliki tantangan dalam mengembangkan keterampilan komunikasi. Sehingga lembaga pendidikan harus menerapkan model pembelajaran yang dapat mengakomodasi kebutuhan mereka. Penelitian ini mencakup analisis kebutuhan untuk mengidentifikasi masalah dan tantangan yang dihadapi oleh siswa dengan hambatan pendengaran dalam berkomunikasi dan menganalisis perspektif dan harapan mereka terhadap model pembelajaran yang sesuai. Penelitian ini melibatkan lima orang mahasiswa dengan hambatan pendengaran yang terdaftar di perguruan tinggi. Data dikumpulkan melalui pendekatan kualitatif. Menurut penelitian, model pembelajaran campuran harus dibuat dengan mempertimbangkan tuntutan siswa tuli agar mereka dapat mengadaptasi komunikasi dalam pembelajaran mereka.

Kata Kunci: pembelajaran campuran, keterampilan komunikasi, gangguan pendengaran

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INTRODUCTION

In today's school system, inclusive education is a major priority, with every individual having the equal right to access and benefit from the learning process. Deaf pupils are one group that requires special attention. Deaf students experience distinct problems when accessing and participating in learning, particularly regarding communication (Pratiwi et al., 2018; WHO, 2023). Their hearing impairments can interfere with relationships with lecturers and fellow students and their comprehension of learning content.

Being deaf or hard of hearing can have various consequences for students. They may struggle to follow lectures in huge venues, especially if the acoustics generate echoes or if the speaker speaks quietly, quickly, or unclearly. People with hearing impairments may struggle to view demonstrations and follow verbal descriptions simultaneously, especially if they observe a sign language interpreter, a captioning screen, or a speaker's lips. Small group discussions can be challenging to follow or engage in, especially if they are fast-paced and unmoderated because there is frequently a lag between a speaker's comments and interpretation (Deaf or Hard of Hearing, n.d.).

In the learning process, effective communication is critical (Marfuah, 2017; Melta, 2022). Students who are deaf must be able to grasp and explain concepts, engage in discussions, and accept feedback from lecturers and classmates. However, they frequently struggle with communication and feel trouble in the classroom.

Developing a blended learning paradigm is a viable way to improve deaf students' communication in learning. Blended learning combines technology with face-to-face interactions, giving students flexibility and various communication options (Baranova et al., 2019; Broadbent & Fuller-Tyszkiewicz, 2018; Medina, 2018). Deaf students can use technology to access visual and aural learning materials, use tools like sign language translators or text translations, and communicate with lecturers and classmates using online learning platforms.

After all, in order to develop a workable mixed learning method for deaf students, a thorough prerequisite study is required (Boelens et al., 2018; Okaz, 2015; Utami et al., 2021). In the blended learning paradigm, the analysis provide insight into communication issues, learning demands, and deaf students/ expectations of technology-based learning. As a result, a suitable blended learning approach for deaf students' communication and learning engagement can be designed.

Previous research has emphasized the significance of using technology in the classroom for deaf kids (Astuti et al., 2023; Muspita et al., 2020; Utami et al., 2023). However, there is currently a scarcity of research that mainly investigates needs analysis and the development of blended learning models that focus on deaf students' communication. As a result, this paper aims to conduct a needs assessment and create a mixed-learning model that can increase students with hearing impairment communication while learning.

It is intended that by understanding the challenges and demands of deaf students and implementing an appropriate blended learning approach, an inclusive learning environment will be developed, giving deaf students equal possibilities for academic success. Deaf students can strengthen communication skills, boost involvement, and feel more connected in the learning process when appropriate blended learning models are developed.

The purpose of this study is to conduct a needs analysis in developing a blended learning model to facilitate communication for students with hearing impairments. Therefore, the following research questions are asked: 1) what are the abilities and potential of students with hearing impairments related to the development of the blended learning model, 2) what are the learning needs of students with hearing impairments, and how the blended learning model can facilitate them, and 3) How blended learning can improve communication for students with hearing impairments in learning activities.

METHODS

This study uses a qualitative approach. As mentioned by (Creswell & Creswell, 2018) qualitative researchers study things in their natural settings, attempt- ing to make sense of, or interpret, phenomena in terms of the mean- ings people bring to them. Data were collected using questionnaires, observations, and interviews. The questionnaire is used to see the student's readiness to develop a blended learning model for students with hearing impairments. Observations were made to observe the communication of deaf students in learning. Interviews were conducted to see more about students' perceptions and expectations of the required blended learning model.

The questionnaire was first developed based on a review of the literature on questionnaire types, initial requirements and needs for the blended learning model for students, as well as an examination of students' communication skills in ongoing learning and the possibility of improving them through the blended learning model. This questionnaire tool was designed with the following components (see table 1):

[Table 1 about here]

The questionnaire was given online via Google Form. Observations were carried out using a checklist during eight meetings or half a semester. Semi-structured interviews were also conducted one by one directly with the help of a sign language interpreter to complete the quantitative analysis results.

The subjects of this study were five deaf students enrolled in the 2022 academic year. All students were registered in the special education department at a university and were in the 1st to 6th-semester range. This study uses nonprobability sampling, namely total sampling where all

members of the population are sampled (Sugiyono, 2012).

A study known as descriptive research is carried out to identify variables, whether they are one or more, without comparing or relating them to other factors (Sugiyono, 2009). Data is grouped by type and category. For qualitative data analysis using Miles and Huberman analysis which consists of data collection, data reduction, data presentation, and concluding (Sugiyono, 2009).

FINDINGS AND DISCUSSION

Based on the needs analysis results, data is grouped based on variable categories. The following describes the student profile and readiness to develop an online learning model consisting of skills in operating ICT devices and internet access skills, as shown in Table 2, Table 3, and Table 4.

[Table 2 about here]

Table 3 shows the device ownership and internet access required to develop the blended learning model.

[Table 3 about here]

University students already have the tools to use the blended model. every student observed had both a laptop and a smartphone. and all of them have internet access via wi-fi facilitated by the campus and also from their cellular data.

Table 4 shows the basic ICT skills needed to develop the blended learning model.

[Table 4 about here]

Students in college already have the basic skills needed to use ICT devices as one of the components of the blended learning model. From the needs analysis, it is known that the ability to operate an ICT device is above 80%.

The most currently accepted learning model by students with hearing impairment is a face-to-face learning model with discussion and lecture methods. They were sometimes accompanied by a power point and some without media. Online learning is also occasionally carried out through Zoom meetings and assignments through a learning management system.

This learning model is still a challenge for deaf students. Based qualitative method using interviews, there is key qualitative:

"*it is difficult to understand learning if the lecturer only explains orally without any supporting writing. It's challenging to understand directions if they are delivered too quickly because I have to focus on the lips of the lecturer and friends*."

"*I need face-to-face learning that provides material regularly at each meeting, and I understand the learning system with power-point and captioned videos. Learning where there is an explanation in writing or can be with sign language during learning*."

Online learning also requires adjustments for deaf student learning. In online education for students with hearing impairments, sign language interpreters are needed, and video material with subtitles and Zoom accompanied by captions that can type in what the lecturer is saying. Key qualitative:

"*Online learning that not only presents assignments but is accompanied by an explanation of the material beforehand, such as power point and videos, so it can be easier to do assignments. Online learning that contains writing while explaining directly without delay*."

Based on the analysis results, it was also found that students' communication skills seen from two aspects, namely, giving arguments and responding to information, were still low. As many as 20% of students are always involved in class discussions, 60% of students are sometimes involved, and 20% are never involved. In online discussions, 40% are always active, and 40% are sometimes involved.

Blended learning is a combined learning model that utilizes the advantages of face-to-face and online learning (Halverson & Graham, 2019; Pham et al., 2021; Zimba et al., 2021). This hybrid learning model can improve communication in learning, including for students with hearing impairments.

Students with hearing impairments have difficulty communicating, so they tend to be inactive in class. So we need a learning model that can accommodate their needs. One is the blended learning model (Anggrellanggi et al., 2020; Basham et al., 2015; Sartinah & Andajani, 2018). Even though the mixed learning model has been implemented by integrating online learning into face-to-face learning, developing a combined learning model for students with hearing impairments must be based on a needs analysis. Because if not, this learning model does not contribute to their learning.

In face-to-face classroom learning, lecturers must know that students with hearing impairments are in their classes. The teacher's concern in the classroom will significantly help the success of learning for students with special needs in inclusive education (Jauhari, 2017; Nugroho & Mareza, 2016). So lecturers must apply learning principles like students with hearing impairments. Several strategies that can be implemented in face-to-face learning are 1) clarifying articulations because deaf students can only see lip movements, 2) providing visual media that students can see and read, 3) providing interpreters for students with hearing impairments, 4) providing opportunities and motivate students to continue to be involved in the learning process.

Educators can use various resources integrated into the learning management system in online learning. Several strategies that can be used are 1) Providing discussion forums that all students can participate in, including students with hearing disabilities, and of course, providing feedback; 2) Providing accessible media and sources in various forms of content such as text-based content, video-based content accompanied by with subtitles.

CONCLUSIONS

This study examined the necessity of creating a blended learning model that can improve and facilitate learning communication for students who have hearing impairments. Needs analysis is an important part that should not be missed and the results of this research will then become the basis for developing the blended learning model. Especially in learning for hearing-impaired students, it is hoped that by developing a thorough understanding of the challenges and needs of deaf students and implementing the appropriate blended learning model, it will be possible to create an inclusive learning environment in which deaf students will have equal opportunities to participate actively and achieve academic success. Blended learning is important to develop because it can facilitate communication for deaf students by allowing various resources and ways to communicate. This research provides a theoretical contribution in developing an inclusive learning approach by enriching references in developing learning models for students with hearing disabilities. This research also provides practical benefits for designing blended learning models for deaf students in learning by providing initial data regarding development needs and can serve as a guide in development. Further research can be carried out regarding the results and evaluation of the use of learning models for students with hearing disabilities.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest

LIST OF TABLE

Tabel 1 / Questionnaire Indicator

No	Aspect	Indicator
1	Introduction	Background The questionnaire's purpose Guidelines for completing questionnaires
2	Respondent ability and potential	Independent learning ability Ability to use ICT devices Ability to use the internet
3	Learning needs	Online learning needs Offline learning needs Learning barriers
4	Communication skill	Asking question Provide responses and arguments

Tabel 2 / Students Profile

Gender	**Total**
Male	1
Female	4
Hearing Loss Classification	
Mild	0
Moderate	1
Profound	4

Tabel 3 / ICT Facilities

ICT Devices	Percentage
Laptop	100
Smartphone	100
Internet access	
Wi-fi	100
Mobile data	100

Tabel 4 / ICT Skils

Computer operating	
Microsoft Office	100
Desktop application	80
Internet access skills	
Google Drive	80
Learning management system	80
Internet searching	100