

ACCESSIBLE DISTANCE EDUCATION: A CASE STUDY OF BLIND AND DEAF STUDENTS IN UNIVERSITAS TERBUKA

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Abstract

Universitas Terbuka (UT) currently has hundreds of disabled students who must be considered for their accessibility to the learning process. However, until now, the accessibility of disabled students is still limited because there are no special services that accommodate them. This study aims to analyze the needs and obstacles of UT's disabled students, especially those with blind and deaf, in accessing open and distance learning (ODL). Data were obtained through in-depth interview with qualitative inductive analysis methods. The latest of this research lies in the object of the research, namely disabled students, especially those who study in universities with an ODL system. The results of this study show that UT's disabled students still have obstacles in accessing various information about lectures, such as learning socialization, scholarships, and other supporting activities. In addition, blind students face obstacles in studying graphs, reading tables, and understanding calculations. This research suggests the need for special services for disabled students, both physical and non-physical, that support the learning process of disabled students, such as consultation services, training of educational personnel, disabled-friendly websites, sign language interpreter facilities, and specific service units as well as the formation of communities to facilitate communication and dissemination of information among fellow disabled students.

Keywords: Accessible Education, Blind, Deaf, Disabled Students

1 INTRODUCTION

Education is a basic right for every individual, regardless of physical condition or limitations (Efendi, 2022). Along with the development of information and communication technology, open and distance learning (ODL) has become a significant alternative in increasing access to education for all groups, including those with disabilities. Universitas Terbuka (UT), as one of the pioneers of ODL in Indonesia, has provided various programs designed to meet the needs of diverse students, including students with disabilities, such as the blind and deaf. However, despite various efforts to make education more inclusive, there are still various challenges faced by students with disabilities in accessing and utilizing ODL programs. Blind and deaf students often face obstacles in terms of accessibility of learning materials, interaction with lecturers and

fellow students, and the use of technology that is not yet fully friendly for people with disabilities (Samarakkody et al., 2023; Setiawan & Apsari, 2019).

Based on the latest student data in 2023, UT has 622 students with special needs or disabilities. All these students are spread throughout Indonesia and even abroad. The category of physically disabled is the majority, followed by the category of blind and deaf with the number of students as many as 128 and 111 respectively. The main problem that needs to be explored based on this data is how UT implements inclusive education for students with disabilities. This study will focus on students with blind and deaf categories. This is because both categories have difficulty in accessing teaching materials. Based on UT's Library website, so far UT has never published teaching materials in Braille. In addition, based on UT's Multimedia Teaching Materials Production Center unit, various contents in teaching material videos available on UT-TV Youtube are also not equipped with sign language translations. The availability of teaching materials in Braille and completing video content with sign language will make it easier for students with blind and deaf categories.

Table 1. Students with Disabilities in Universitas Terbuka 2023

Category	Total Students
Physically disabled	298
Multiple disabled	3
Mentally disabled	42
Emotionally disabled	17
Blind	128
Deaf	111
Speech impaired	23
Total	622

Source: Universitas Terbuka, 2023

Previous research on inclusive education for students with disabilities has been conducted by researchers around the globe. Study from Anzari et al. (2018) aims to uncover the government's role in implementing inclusive education for individuals with disabilities. The findings indicate that the government has not been able to fully optimize this effort due to various challenges, highlighting the need for additional support, particularly in terms of human resources and physical infrastructure. Meanwhile other study from Jauhari (2017) in his research stated that people with disabilities are also members of society and have the right to be in their community. They should receive the support they need through the education system, health, employment

providers, and social services that apply generally. People with disabilities have the same rights, they must also have the same obligations. As part of the equal opportunity process, facilities and infrastructure should be provided to help people with disabilities so that they can carry out their full responsibilities as members of society.

Another study from Kristiyanti (2019) tries to develop a model for the implementation of inclusive education for people with intellectual disabilities in Jakarta. The findings reveal that social exclusion arises from cultural barriers, such as stigma, labeling, prejudice, and stereotypes, as well as structural barriers caused by discriminatory policies. These barriers can be mitigated through the implementation of inclusive education for individuals with intellectual disabilities. The inclusive education model developed focuses not only on enhancing life skills for individuals with intellectual disabilities but also on empowering and improving the surrounding community and environment. As a result, children with intellectual disabilities can achieve independence and actively engage in society.

Inclusive education is one of the issues targeted by the Millennium Development Goals (MDGs). The concept of inclusive education is stated in General Comment 4 (GC4) Article 24 of the United Nations (UN) Convention on the Rights of Persons with Disabilities. According to GC4, a person with a disability needs access and support for primary, secondary, higher, and tertiary education. If they have entered formal education, then a person with a disability must follow a normal learning environment. The existence of an inclusive education model supports a person with a disability to receive education in a supportive environment and equality in various things (Le Fanu et al., 2022). Study conducted by (Moriña, 2017) states that inclusive education in higher education can be a challenge because of the increasing number of students with disabilities who complete elementary school, the need to switch to inclusive practices in higher education is also increasing. In line with that study, (Hughes et al., 2016) attempted to explore how universities meet the academic support needs of students with disabilities.

Another study from Chinese university by Zhang et al. (2018) proved that one of the problems of inclusive education for disabilities is that teachers should hold positive emotions and attitudes toward the right of students with disabilities to access higher education. To date, teachers often lack of motivation, knowledge, skills, and strategies needed to address the specific needs of these students. To ensure the successful implementation of inclusive higher education, it is essential to establish a robust service center for students with disabilities, a professional support network, and an administrative system that offers support to both teachers

and students. (Sarkar, 2016) states for students with disabilities, the university experience can often feel overwhelming and difficult. Challenges are found in numerous areas, including course content, staff training, facilities, accessible environments, social stigma, negative attitudes, resources, educational policies, legislation, assistive technology, as well as the examination and evaluation process. This paper aims to emphasize the need to restructure universities to promote inclusivity and suggests measures to address the various challenges faced by students with disabilities in creating an inclusive campus environment.

This explains that inclusive education needs to be implemented in every line, including higher education. Thus, this study focuses on how higher education implements the learning process to people with disabilities. There are differences in learning needs for people with disabilities in primary education and higher education. In elementary and secondary education, learning process is more structured, with the same curriculum and students receive direct direction from teachers. Meanwhile in higher education, students are expected to have a higher level of autonomy in managing their own learning. They are responsible for accessing the necessary resources and services. In addition, there are also differences in learning methods, facilities, emotional support, social, independence, and responsibility in higher education. However, people with disabilities still have the right to pursue higher education and higher education institution must provide facilities that support the implementation of inclusive education.

Previous studies conducted Bell & Swart (2018); Dolorosa et al. (2018); McKeown & McKeown (2019); and Soleh (2014) by have not examined how students with disabilities learn in ODL like UT. Therefore, this study aims to investigate how blind and deaf students in UT can access distance learning. Through this case study, it is hoped that a deeper understanding of their challenges and special needs can be obtained, as well as how existing policies and practices can be adjusted to improve the inclusivity and accessibility of education for all. This study is also expected to provide recommendations for UT and other ODL institutions to develop more inclusive and accessible programs for students with disabilities.

2 METHODOLOGY

The method used for this study is qualitative inductive analysis method. The object of this study is students of the Economic Development Study Program in UT who have disabilities in the categories of blind and deaf. The analysis and data were obtained through a literature study approach and in-depth interview. Literature study approach was conducted because it was considered effective in providing a broader picture of how inclusive education is implemented

at various levels of education, especially in higher education. Meanwhile, in-depth interview was conducted on 4 students (1 student in the blind category and 3 students in the deaf category) and 2 student companions. The reason why this study chooses Economic Development Study Program's students to be the respondent is because the majority of courses in the study program require understanding graphs, tables and mathematical equations to achieve the expected learning outcomes.

Table 2. Profile of Respondents

Respondent Code	Category	Year of Entry
R1	Blind	2022
R2	Deaf	2021
R3	Deaf	2021
R4	Deaf	2022
R5	Student companion	-
R6	Student companion	-

3 FINDINGS AND DISCUSSION

The results of the literature review show that inclusive education research has been conducted by several authors in several countries. Most of these studies examine the implementation of inclusive education at the pre-school and primary school levels. Only a few studies analyze the application of inclusive education in higher education. The research gap of this study is to examine the application of inclusive education in higher education with open and distance models. The following is the development of research on inclusive education from year to year.

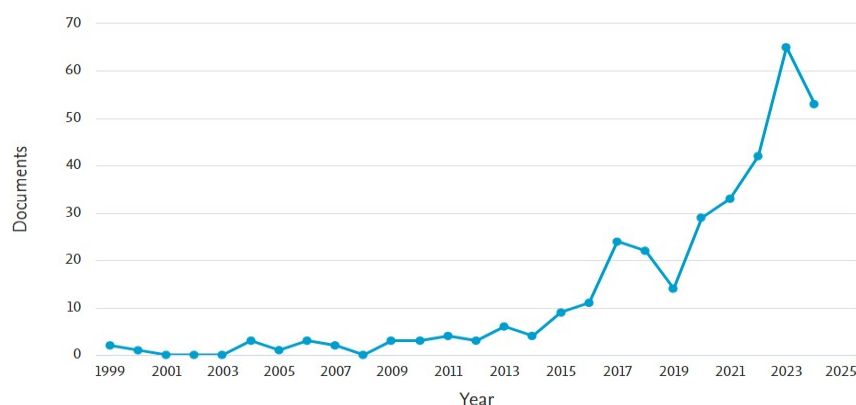


Figure 1. Inclusive Education Research Based on Dimension Metrics by Year

In terms of authors, the development of research in the field of inclusive education can be shown in Figure 2 below. This graph is a visual representation of previous research. Dots indicate the individual researcher, dots that gather to form clusters indicate the similarity of certain research, lines indicate connections between research and different colors indicate different research groups. The connecting lines between clusters show the relationships and connections between studies. Previous research on inclusive education points to some important findings that have influenced perspectives and practices in this field. In general, inclusive education focuses on ensuring that all students, including those with special needs or disabilities, have equal learning opportunities in regular classrooms. Some of the key findings from previous research include socioeconomic benefits, improved academic outcomes, the role of teachers, barriers to implementation, education system policies, and the influence of the social environment (Kart & Kart, 2021; Wijayanti et al., 2024).

Studies show that inclusive education supports the social and emotional development of students with and without disabilities. Students in inclusive environments tend to develop better social skills, such as empathy, tolerance, and collaboration. This is not only beneficial for students with disabilities, but also for students without disabilities who learn to appreciate diversity. In terms of academics, several studies have shown that students with disabilities who study in inclusive classrooms often show improvements in their academic results. This is due to better access to the general curriculum and higher academic expectations. However, this also depends on there being adequate support from teachers and the education system to adapt teaching to students' needs (Khoshimov et al., 2022).

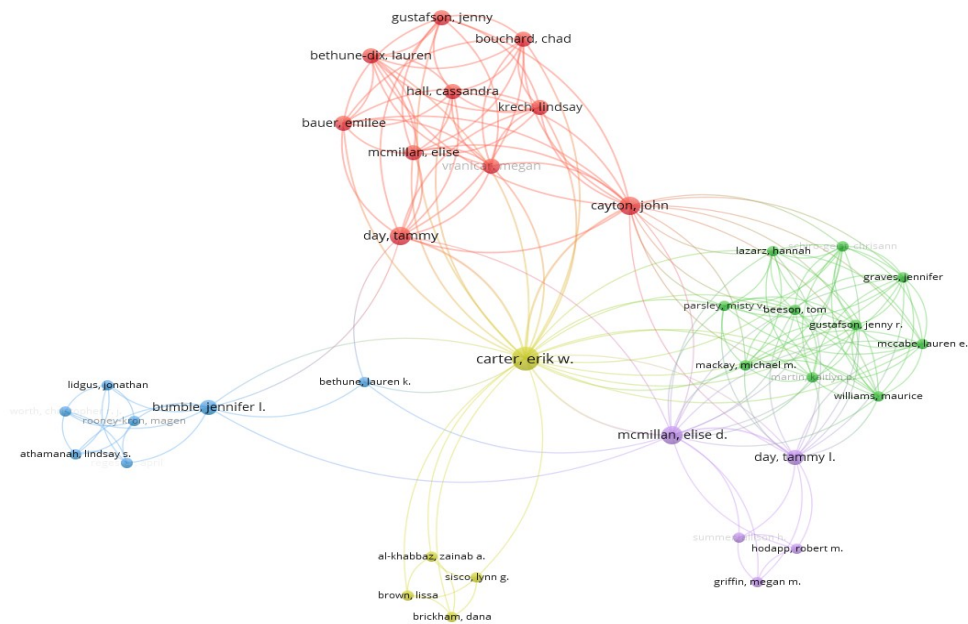


Figure 2. Inclusive Education Research Based on Dimension Metrics by Author

Analyzing the needs of blind or visually impaired and deaf or hearing impaired students in ODL is very important to ensure accessibility and inclusiveness. Based on the results of in-depth interviews conducted with students with disabilities in the Development Economics Study Program in UT, several obstacles and needs for learning in ODL system were obtained. The results of this study shown in Table 3 below and indicate that UT students with hearing impaired have obstacles in accessing various information, such as difficulties in understanding learning videos, difficulties in understanding socialization of various campus activities, difficulties in accessing scholarships, and other supporting activities. Whilst the obstacles faced by blind or visually impaired students are studying graphs, reading tables, and understanding calculations in every courses.

Table 3. Need Analysis of Blind and Deaf Students in Open and Distance Learning

No.	Blind Students	Deaf Students
1.	Accessibility to visual materials	Access to audio and video content
2.	Assistive technology devices	Use of visual communication tools
3.	Access to exams and assessments	Access to social interaction
4.	Social interaction and collaboration	Social interaction and collaboration
5.	Disability-friendly physical facilities	Access to real-time information
6.	Technical Assistance and Support	Support of others

Source: Result of In-Depth Interview, 2024

The first challenge faced by visually impaired students is access to visual materials. Many learning materials, such as presentations, graphs, images, diagrams, and videos, are not accompanied by alternative descriptions that can be read by screen reader devices. This makes it difficult for blind students to understand important visual content. Braille module can be one solution for blind students. However, based on the interview results, not all blind people understand Braille. This is because some blind people are not born blind, but become blind due to illness or accident. Thus, audiobook will help blind students in accessing learning materials better. The next challenge is the need for assistive technology devices. Some online learning platforms may not be fully compatible with screen reader devices used by blind students. Inaccessible navigation buttons, or poorly structured text, can hinder access to content. Visually impaired students require specialized devices such as screen readers (e.g. NVDA or JAWS), screen magnification devices, or audio recording devices. Learning applications must be compatible with these devices.

Another difficulty faced by blind students is how they are accessing exams and assessments. Exams based on digital platforms often do not provide options that are accessible to visually impaired students. For example, questions involving images or graphics without text descriptions are a barrier. The solution is that exams and assignments should be provided in accessible formats, for example, exam questions can be accessed through screen reader devices or provided in audio form. Additional time may be required for their exams. Furthermore, blind students need social interaction and collaboration. Visually impaired students may have difficulty interacting spontaneously in a text-based online discussion forum if the platform is not designed to be accessible to screen readers. This is also applies in webinar based classrooms where visual features such as chat boxes are often difficult for them to use. Then, there is the need for disability-friendly physical facilities such as ramps, elevators, special toilets, and tactile blind guidance paths.

Deaf or hearing impaired students also have special challenges and needs in accessing learning in higher education, especially in ODL. The first challenge is in accessing audio and video content that is not equipped with subtitles or sign language translations. Based on the interview with the students, it is known that subtitles will not make it easier for them to understand the learning material. This is because subtitles provide the literal language of what is said in the

audio or video content, while deaf people understand simpler language such as sign language. Sign language is very different from normal language, because sign language is simpler than everyday language, without complicated grammar. Thus, providing sign language translation to audio and video contents will be a great help for them to understanding learning material. However, subtitles can still be used for audio and video with light topics, such as for campus activities socialization. Meanwhile for webinar based classroom or seminar should allow for direct sign language interpretation or interpreter services.

Another challenge for deaf students is they lack of social interaction. Deaf students may need adaptations in the form of written discussions or Q&A, as previously discussed, the language they understand is much simpler without complicated grammar. Deaf students also receive lack of real-time information where deaf students often miss important information during discussions or lectures if the information is delivered verbally without text translation or sign language. This leaves them behind in understanding learning material or instructions delivered in real time. Furthermore, environmental support is much needed for deaf students. Universities may not provide adequate technical support for both blind and deaf students, such as providing specialized assistive devices, sign language interpreter services, or a team that can help students overcome technological issues related to accessibility (Khoshimov et al., 2022).

To ensure the success of blind and deaf students in ODL, a holistic approach is needed that incorporates accessibility technology, technical support, curriculum modifications, and institutional awareness. All these elements must work together to create an equal and inclusive learning experience, thus disabilities students can reach their full academic potential. Some solutions that can be pursued are (1) use of accessibility technology: the use of assistive devices such as screen readers, automatic subtitles, and sign language translation software should be well integrated in the learning platform. Lecturers also need to be trained in using these tools; (2) adaptation of teaching materials: learning materials need to be provided in various formats, such as text for the hearing impaired and audio for the visually impaired. In addition, providing text descriptions for images and graphics and subtitles for videos is an important step; (3) provision of support services: educational institutions need to provide sign language interpretation services, audio descriptions, or other assistive devices according to the needs of students with disabilities; and last but not least (4) awareness raising and training: lecturers, staff, and other students need to receive training to increase awareness and understanding of the

accessibility needs for blind and deaf students so that the learning environment becomes more inclusive (Wijaya et al., 2023).

4 CONCLUSION

Blind and deaf students face significant challenges in ODL, particularly with accessing learning materials and interacting with the academic environment. To ensure inclusive ODL for blind and deaf students, there needs to be a combination of technology that supports accessibility, training for teaching staff, and inclusive curriculum design. Providing assistive devices and adaptations in the learning process are important steps to overcome the barriers they may face in ODL. Another solution that can be done in the early stage is the preparation of learning materials in two versions, visual texts for the hearing impaired and audio materials for the visually impaired. In addition to accessibility, institutional support and awareness of inclusivity are needed to ensure equal and fair education for students with disabilities.

This research suggests the need for disability-friendly services, both physical and non-physical, that support the learning process. The disability-friendly services including consultation services, training of education personnel, disability-friendly websites, sign language interpreter facilities, and special service units as well as the formation of communities to facilitate communication and information dissemination among fellow students with disabilities.

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