

# The Importance of Technology Education for Children with Special Needs in Inclusive Schools

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**Abstract—** Inclusive schools are schools that allocate all children without exception in one The room does not pay attention to differences in physical, intellectual, social, emotional and emotional conditions other. This includes children with disabilities/disability, children who are lazy to learn, children who not talented, street children and children who are in the lower class. Education technology inclusion provides a very wide, open, and friendly space in learning. The inclusive education system always prioritizes mutual respect for differences. Therefore, the inclusive education technology system aims to remove obstacles and solve problems and support the implementation of inclusive education to children with special needs. There are several adaptive technologies at play important i.e., NVDA (Non-Visual Desktop Access), JAWS (Work Access by Speech), I-Chat (I can hear and speak). This service intends not to discriminate one child with another, regardless of background, economy and culture, so that they can develop, learn like children in general. The one that become the most important thing from the success of an inclusive education, namely increasing it the quality of the teaching staff.

**Keywords—** *inclusive school, education technology, children with special needs.*

## I. INTRODUCTION

The nation's most important asset is a given child attention and also good education in all aspects with the aim of becoming a quality human character in the future. Develop abilities and shape character and civilization a dignified nation in order to educate the nation's life This has been stated in Law No. 20 of 2003. Education is a basic right for all citizens in Indonesia, even if they are children special needs. Differences need not be debated but difference is something that needs to be prioritized. Every child is born each bring their own uniqueness. Government plays an important role in providing equitable education and also in

development of education so that the quality of Indonesian education is getting better [1], [2].

Organizing education for children with special needs The government has provided special educational facilities for children with special needs is called SLB (Special School). However, thing This makes it a distance that can separate the children with special needs with normal children in general, this is become an obstacle in interacting between them [3], [4]. This will make children with special needs feel excluded when interacting with society. Child with special needs will speculate that they are not part of community life. Children with special needs also have the right and obligations and need to adapt to the environment, so it's only natural that they want to be able to participate in their environment [5].

Inclusive schools are one of the educational institutions for all children without discrimination where in this school children can learn together without any difference. In inclusive schools all students get the same rights and obligations without any special treatment [6], [7]. In the process of teaching and learning technology learning plays an important role in the learning process, with it can be a lesson in inclusive education that able to solve problems.

Providing quality education to students in this information age requires teachers to always keep abreast of technological developments. Very important for teachers to have the technology skills needed to be able to harness the power of computers and the technology associated with them to effective teaching. Technology in the form of computers, information networks, and Multimedia will provide access to everyone in society to learn.

Computers are an important part of today's inclusive classroom. Among the meanings important is assistive

technologies (assistive technologies) that help students with special needs to learn to do tasks related to study and daily life. Some assistive technologies allow students with disability to access computers; others provide various opportunities education not previously offered. Among the most important assistive technologies are those that provide access to computers and other modern communication technologies to students with disabilities. The keyboard can be modified, so it can be used for example for people who only has one hand or one finger to type. Introduction programs Voice allows students with various physical disabilities to enter text into the in the computer by talking. Joysticks have been developed to allow Individuals control computers by pointing with their chin or head.

Today there are various kinds of assistive devices that can provide a variety of educational opportunities. For example, large letters and Braille translation with help computers can help communication for students who have difficulties vision. Braille translation software can convert text to Braille format appropriate. Screen-magnification software enlarges the size of text and graphics, similar to captioning and display of real-time graphics on television, broadcasting dialogue and action in a television show or film through printed text. Computer speech synthesizers can produce spoken words artificially. Speech recognition software (software to recognize voices) can help students who can speak only a few sounds to perform various tasks. Individuals are taught several "token" sounds that the computer can respond to specially programmed. The computer recognizes sounds and performs various functions daily activities and school-based functions, such as turning on the TV, playing videotape, or access the school curriculum on CD-ROM. Equipment Other advanced technologies react to brain signals and then translate them into digital commands and actions. Other technologies, such as adaptive devices and dedicated buttons, enable students with physical disabilities to improve their functional mobility by turning on various tools and controlling other tools.

Tools or media is an important component in an education in helping the needs of students [8], [9]. In inclusive educational institutions, adaptive technology can help children with special needs where they are trained to use media technology like other students, therefore adaptive technology can help them in the learning process. In order to achieve In the learning process, it is necessary to pay attention to the target regarding the participants so that they can provide future evaluations so that they can find out what are the shortcomings in the learning process in the classroom and outside of the classroom.

## II. METHOD

The nation's most important asset is a given child attention and also good education in all aspects with the aim of becoming a quality human character in the

future. Develop abilities and shape character and civilization a dignified nation in order to educate the nation's life This has been stated in Law No. 20 of 2003. Education is a basic right for all citizens in Indonesia, even if they are children special needs. Differences need not be debated but difference is something that needs to be prioritized. Every child is born each bring their own uniqueness. Government plays an important role in providing equitable education and also in development of education so that the quality of Indonesian education is getting better [1], [2].

## III. RESULT AND DISCUSSION

The use of technology in inclusive schools is a challenge for a teacher to use more strategies and methods learning in order to be able to understand the students. Educating in inclusive schools is a challenge as a teacher so that continue to be patient and be able to make the children with special needs feel comfortable and also feel that they have the same rights as normal children usually. In a process of learning strategies and learning methods become very important, especially for teachers who teach in schools inclusive. Learning media is also an important part of the learning process because it will help the effectiveness in conveying the material by Therefore, it is necessary to find interesting learning media and create students understand the material.

The Indonesian government has provided guarantees to students children with special needs to get a quality education. Thing This is in accordance with the mandate of the 1945 Constitution Article 31 paragraph 1 and Law Number 20 of 2003 concerning the Education System National. Therefore, there is no need to debate the existence of differences but rather make it an advantage. Therefore for To realize the law, an education system that is implementing the law, namely the inclusive education model. An important component in inclusive schools is the existence of tools aids or media that students need. Tools and media learning is different from that used by students in generally. One of the assistive technologies that play an important role in the process learning is computer. Parts and devices that play an important role in inclusive education is computers and computer networks. In the context of inclusive education for children with special needs should be can use technology media like students in general. So that it can help children with special needs in the process study. Of the many adaptive technologies, the most important are those that can access the network to computers and information technology. There is several very important adaptive technologies, namely NVDA (Non-visual Desktop Access), JAWS (Job Access With Speech), I-chat (I can hear and talk) [11], [12].

### A. Non Visual Desktop Access (NVDA)

Is a technology in the form of a screen reader (screen reader). paid services that can make it easier for children with special needs such as blind and visually

impaired children to using a computer. The application has a way of working with read the text on the screen in the form of sound contained in the computer and the reader can move the cursor where the text is located, with the presence of arrows on the keyboard the reader can read what will be read. Non Visual Desktop Access (NVDA) is one of the many names for screen reader software that is installed on computers with visual impairments. Its function, which reads out text information on a computer screen, makes NVDA a very useful application for the visually impaired. In addition, this screen reader software created by a blind programmer from Australia also offers several advantages that make it different from similar applications.

For blind people and children with visual impairments, give instructions to the computer and answer messages simply by maximize it in memorizing the place and function of the computer keyboard. This keyboard is input by the process of entering equipment by means of activate via the keys available on the keyboard, so in using this talking computer is blind and children who have visually impaired can select the commands contained in the menu can be accessed via the keys on the keyboard or pressing the key shortcuts [13]

#### *B. I can Hear and Talk (I-CHAT)*

The I-CHAT (I Can Hear and Talk) app is a learning app using a computer-based sign language designed for Children who have a hearing loss or are visually impaired which is packaged in the form of multimedia [14]. The I-chat application has been socialized to approximately 122 SLB-B in Indonesia, this IChat is a CSR (Corporate Social Responsibility) Program from PT. Telekomunikasi Indonesia, Tbk. To date, the I-CHAT application loads 7000 words in the form of video content and pronunciation. This application can be useful for the community with special hearing needs as well as their parents, teachers and relatives. i-CHAT application is available for Languages Indonesian & Malaysian (Malay) cues [14]. This application directs users to learn Indonesian Sign Language & Malaysia and how to organize affirmative sentences [12].

#### *C. Job Access with Speech (JAWS)*

The Jaws program is hardware and software that can produce a reading sound, both printed and braille. Technology is growing very rapidly and can provide opportunities and new learning for students who are hampered in learning his eyesight [15], [16]. The jaws program can be used by people with visually impaired in the educational process as a medium of learning. With the creation of this program will greatly assist the learning process for students blind people so that they will not be left behind in understanding the learning materials and assignments given by teacher or educator. In this program they can play files containing learning materials so that they can make assignments

independently and also the assignment can be printed both in Latin and braille print media [17], [18].

#### *D. Inclusive Education Service System in Indonesia*

Various worlds strive to provide educational services For children with special needs, this is a state concern because there are still many children with special needs who do not get educational services. That's where education comes from inclusiveness as a human right (International Declaration on Human Rights 1948 and the International Convention on the Rights of the Child, 1989).

Government Indonesia has been trying to facilitate educational services for children with special needs, namely special schools (SLB) that already exist in Indonesia some areas in Indonesia, but this becomes a wall separator for children with special needs with normal children in general. Children with special needs will feel isolated in the interaction process with society. In Law No. 20 of 2003, Article 5 states that "Every citizen has the same right to get education, and even if it is a child with special needs" from here it is clear that it is the government's obligation to facilitate and provide the right to education for children with special needs.

#### *E. Application of Technology in Inclusive Schools*

Today's technology plays an important role in the process learning. In this case the teacher is required to be able to operate technology to be able to carry out the IT-based learning process. Use technology in inclusive schools is a challenge for a teacher to use more learning strategies and methods where so that can understand for students.

To understand the needs and learning barriers of each child, through a process called assessment. In the context of education special needs, assessment becomes the basic competence of a teacher in particular for teachers who organize inclusive education. Understanding of it completely and thoroughly will only happen if it begins with understanding of the essence of the Individualized Education Program ) known as IEP. By understanding IEP, cooperation between components such as; teachers, parents and inter-team involvement will occur, the provision of subject matter based on the needs of all children will be pursued, as will the separation of burdens and responsibilities responsibility in the learning process between the special supervising teacher and regular teachers will be avoided.

In applying technology in inclusive schools, it is necessary integrating a learning tool that is suitable for learning conditions for children with special needs with normal children in general. In the use of technology is an effective thing in helping children special needs to be able to understand a learning material.

Children with special needs in the learning process experience little difficulties, for example, which

students have hearing loss they rely on the movement of one's lips to know what they are saying [19], [20]. Therefore it is necessary to introduce assistive technology that can help students, for that teachers to can take advantage of technological activities that help students. Very technology plays an important role as a learning medium in helping children with special needs who have been arranged as well as possible so that they can used for children with special needs.

#### IV. CONCLUSION

The use of technology in inclusive schools is a challenge for a teacher to use more strategies and methods learning so that students can understand. Use technology in inclusive schools is a challenge for a teacher to use more learning strategies and methods where so that can understand for students. Educate in inclusive schools is a challenge as a teacher to continue to be patient and able make children with special needs feel comfortable and also feel that they have the same rights as normal children. Limitations because of certain obstacles experienced by children with special needs, of course need adaptive technology tools, technology that can provide access to computers and information technology. There are several adaptive technologies very important ones are, NVDA (Non Visual Desktop Access), JAWS (Access Work with Speech), I-Chat (I can hear and speak).

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