



**COLLEGE OF EDUCATION AND BEHAVIOURAL
SCIENCE**

**DEPARTMENT OF SPECIAL NEED AND INCLUSIVE
EDUCATION**

**ACCESSIBILITY AND UTILIZATION OF ASSISTIVE TECHNOLOGY
INFLUENCE ON ACADEMIC ACHIEVEMENT OF STUDENTS WITH
DISABILITY IN RESOURCE CENTER: THE CASE OF MIZAN AMAN
TOWN, SELECTED PRIMARY SCHOOL**

BY: - ALEMAYEHU KASHEKU

JUNE, 2024

HAWASSA, ETHIOPIA

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BY:

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**THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF HAWASSA
UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DE-
GREE OF MASTERS OF ART IN SPECIAL NEEDS AND INCLUSIVE EDUCATION**

ADVISOR: TEFAYE BASHA, (PhD)

JUNE, 2024

HAWASSA, ETHIOPIA

DEDICATION

I dedicate; this piece of work to my beloved and courageous wife Marta Laglago and my daughter Amen Alemayehu. Both were instruct me courageous and to be sincere I will never ever forget their endless love, sacrifice, kindness and tender efforts to my today personality and my success in my life.

DECLARATION

I hereby declare that this Master of Art degree thesis entitled “ Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students With Disability in Resource Center: The Case of Mizan Aman Town, Selected Primary School” Is my original work and has not been presented for a degree and master’s degree in any other university, and all sources of material used for this final thesis work have been duly acknowledged.

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Place: Hawassa University

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ADVISOR APPROVAL SHEET-I

This is to certify that the thesis entitled “Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students With Disability in Resource Center: The Case of Mizan Aman Town, Selected Primary School” submitted in partial fulfillment of the requirements for the degree of Master's with specialization in Special Needs and Inclusive Education the Graduate Program of the Special Needs and Inclusive Education and has been carried out by Alemayehu Kasheku under my supervision. Therefore I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Name of major advisor

Signature

Date

EXAMINORS' APPROVAL SHEET –II

We, the undersigned, members of the Board of Examiners of the final open defense by **Alemayehu Kasheku** have read and evaluated his/her thesis entitled “**Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students With Disability in Resource Center: The Case of Mizan Aman Town, Selected Primary School**” and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of Special Needs and Inclusive Education.

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Final approval and acceptance of the thesis is contingent upon the submission of the final copy of the thesis to the school of Graduate Studies (SGS) through the Department/School Graduate Committee/DGC/SGC of the candidate's Department/School.

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ACKNOWLEDGEMENTS

I want to start and end this study with expressing my gratitude to our All-Powerful God. Second, I would like to use this opportunity to recognize and convey my sincere gratitude to my advisor, Dr. Tesfaye Basha, for his tireless intellectual assistance that allowed me to successfully complete this thesis. Thirdly, I would like to express my gratitude to all of the study participants, including the general teachers of Mizan Number One and Aman Number One Primary Schools, school principals, supervisors, the head of the City Administration Education office, and education specialists from both the zone and the City Administration Education office. In addition, I would like to thank my wife Marta Laglago for her support and her presence on my side from the beginning to the end of my work and in time of difficulties. Finally, I want to thank my Colleagues who teach in Bonga University and Bonga Colleges of Teacher Education for their moral support throughout the research.

ABBREVIATIONS AND ACRONYMS

AT	Assistive Technology
CRPD	Convention of the Rights of Person with Disability
FAPE	Free Adequate Public Education
GDP	Global Developmental Program
HR	Human Right
HI	Hearing Impairment
ICT	Information and Communication Technology
NGO	Non-Governmental Organization
PWD	People with Disability
UDHR	Universal Declaration of Human Rights
UN	United Nation
UNESCO	United Nations Educational, Scientific and Cultural Organization
VI	Visual Impairment
WHO	World Health Organization

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ABSTRACT

This study investigated the Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in resource center: The Case of Mizan Aman Town, Selected Primary School. An explanatory Sequential design and a mixed research approach were used in the study. The participants involved in the study were general and special education teachers, principals, supervisors, the head of the City administration's education office, and Education experts in the Woreda/Zone education office. Generally, 66 sample subjects were included in this investigation. Questionnaires, interviews, focus groups discussion, document analysis and observation were used to collect data. The quantitative data were analyzed using frequency, percentiles, mean value, and standard deviation, whereas, the qualitative data were arranged, categorized, and subjected to thematic analysis in order to identify any developing response patterns. The findings revealed that barriers to the use of assistive technology to support academic success for children with disabilities were a lack of funding and information, a lack of budget, non-fulfillment of orders due to cost, a lack of skilled specialists in the field, and others. So, it is possible to conclude that students with disabilities in Mizan Aman selected primary School had little access to and did not have much utilize ATs in the way it is expected to be but the understanding about AT is good. In light of the findings, the study recommends that collaboration and evidence of commitment from the educational office, Woreda/Zone/schools, and other stakeholders to achieve the accessibility and utilization of assistive technology Influence on Academic Achievement of Students with disability in resource centers is necessary.

Key Words: - accessibility, academic achievement, assistive technology, disability, students with disability, utilization

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

A disability is a natural aspect of human being. At some point in their lives, everyone may become temporarily or permanently disabled. It can happen at birth, in childhood, in maturity, or in old age; at any point, it decreases a person's individual's capacity for independent functioning. Assistive technologies should be used in schools to close the gap caused by students' disabilities in order to improve the functioning of disabled students and it can be help them become more independent (Evangel O, 2022).

Disability results from the combination of health issues with personal, environmental, and social variables; it is neither only a biological nor a social construct (WHO, 2001). Three categories of disability exist: impairment of physical structure or function; limitation of action, like not being able to read or move around; and restriction of participation, like being kicked out of school or the workplace. Therefore, persons with impairments encompass both those who are conventionally classified as impaired and those who struggle to function as a result of a variety of medical problems, including multiple sclerosis, chronic illnesses, severe mental disorders, and advanced age. Over a billion individuals worldwide live with disabilities, with 110 million to 190 million of them facing severe challenges. Trends in health conditions, the environment, and other variables impact national patterns of disability (WHO, 2013).

Regarding on this human being conditions, Students with disabilities have presents a unique challenge, limitations in accessing information, navigating their surroundings, and engaging in daily activities. So, those students went extra help to emerge as a powerful tool, enabling individuals with impairments to enhance their independence, improve their quality of life, and participate more fully in society. For these students a technology to help their messing parts is called assistive technology. In the modern world, technology is developing at an astoundingly rapid rate and has given people a plethora of opportunities. One user group profiting from the potential presented by this expansion in technology is students with disabilities. With the help of technology, especially assistive technology, students with disabilities can now have many chances that were either nonexistent or, at most, just available to them in the past(DeLee, 2018).

So, the Products and related services used by people with disabilities to facilitate and improve their inclusion in all areas of participation are collectively referred to as assistive technology, or AT. People of all ages, with all kinds of disabilities and activity limits, and for short or long periods of time, can utilize it. Additionally, it lessens the need for long-term care, formal health and support services, caregiver labor, and the requirement for individuals to live healthy, productive, independent, and dignified lives. It also allows people to engage in civic life, education, and the labor market. The impact of illness and disability on an individual, their family, and society is increased when assistive technology is lacking since people are frequently shut out, alone, and imprisoned in poverty (Edyburn, 2020).

Through the development of various technologies that enable them to be integrated and ease tasks that would have been impossible, technological growth does support people with disabilities. People with special needs and impairments can now be accommodated in all settings, including businesses and educational institutions, thanks to these technological advancements. The technology facilitate the access to education and employment for individuals with disabilities and special needs, enabling them to lead more independent lives With the use of assistive technology, intentional attempts are made feasible to provide students with disabilities access, integration, and enhancement along with active engagement in the teaching-learning process and the chance to compete in all facets of life (Technology, 2021).

Children with disabilities can benefit from using assistive technology (AT), but the type of technology they require and how much of it they need depend on their specific disability. For example, braille materials, notebooks with higher margins, audio novels, and computers with screen-reading software can all be helpful to youngsters who are visually impaired. On the other hand, children with hearing difficulties need to wear hearing aids or closed captioning. Wheelchairs, pencil grips, and book holders are necessary for children with motor difficulties, such as locomotor disabilities or motor coordination issues (Assie, 2021).

As a result of these technologies, an individual's life may be impacted by assistive technology (AT) in a variety of ways. Every student's educational needs and ability levels, as well as the goals, needs, and comfort level of the family, will have an impact on the AT decisions for that child. If AT is utilized in the community or at home and has an impact on a child's access to a free adequate public education (FAPE), it may also be included in the educational plan. Numer-

ous commercially available products may be useful; alternatively, there are methods for creating new devices or altering already-existing equipment. According to Edyburn (2020), assistive technology is used in many of the adaptations and accommodations that parents and educators have made to allow students to participate in everyday activities.

Consequently, Accessibility is a key when it comes to utilizing these technologies effectively. It involves ensuring that the devices are user-friendly and customizable according to individual needs. The accessibility of assistive technology for students with disabilities in resource centers is a crucial aspect of ensuring equal educational opportunities and to improve students' academic achievement. In addition to this, Utilization of Assistive Technology for Students with disabilities in Resource Center is essential for supporting academic achievement of student's disabilities. It enables them to access information and participate actively in their education. By providing specialized tools and guidance from trained professionals, resource centers empower these students to overcome barriers and achieve their full potential academically. However, through the utilization of assistive technology in resource centers, these students can overcome these obstacles and achieve academic success(Marsters & Burke, 2011).

In addition to accessibility, utilization is another critical aspect that needs attention. A study conducted by Chen et al. (2019) explored the utilization patterns of assistive technology among students with disabilities in resource centers globally. The research highlighted that factors such as training programs for teachers and support from school administrations greatly influenced the effective use of assistive technology. To ensure international best practices are implemented, collaboration between governments, educational institutions, and organizations specializing in assistive technology is vital. Sharing knowledge and resources can help bridge gaps between countries with varying levels of accessibility and utilization (WHO, 2022).

Resource centers are dedicated spaces within educational institutions that offer specialized support and services for students with disabilities. These centers aim to provide an inclusive learning environment by offering various assistive technologies tailored to meet the specific needs of each student. For instance, for visually impaired students, technologies like screen readers, braille displays, and magnification software enable them to access digital content and participate in classroom activities effectively and for students with hearing impairments, technologies like captioning systems and FM systems enhance their ability to understand spoken language and engage in

classroom discussions. Additionally, tactile graphics and sign language interpretation services further facilitate communication between teachers and students. Similarly, for students with physical disability Orthotics and Prosthesis materials should be accessing in resource center (LaRae Jacobsen & LaRae, 2012).

A study by Smith et al. (2018) found that countries like Finland and Canada have implemented progressive policies that prioritize accessibility in education through funding initiatives for assistive technology. These countries also emphasize research-based practices when selecting appropriate technologies in their resource centers. In conclusion, international practices on accessibility and utilization of assistive technology for students with disabilities highlight the importance of tailored technological solutions, inclusive training programs, collaboration among stakeholders, as well as research-based policies. By implementing these practices globally, we can ensure that all students have equal opportunities to thrive academically regardless of their disabilities (Access et al., 2023).

Organizations like the African Union have recognized the importance of inclusive education and have made efforts to promote accessibility for all students. Additionally, partnerships between governments, non-governmental organizations (NGOs), and international agencies have led to increased funding for assistive technology programs. For example, the United Nations Educational, Scientific and Cultural Organization (UNESCO) have collaborated with various African countries to develop guidelines on inclusive education policies that address the needs of students with disabilities. These guidelines emphasize the importance of providing appropriate assistive technology in resource centers.

Due to extremely limited or nonexistent access to assistive items in the health sector, users and their families in Ethiopia are burdened with significant out-of-pocket expenses. When services are available, they are frequently isolated, dispersed, and primarily donor-funded. This makes it difficult to provide assistive technologies for people with disabilities (PWDs). In addition, there is a lack of qualified workers for assistive product prescription, fitting, user education, follow-up, and maintenance. The majority of services are provided by employees who lack formal training and ongoing professional development. The provision of AT and the quality of its manufacturing are not guaranteed since there is no established standard. Furthermore, the community lacks

awareness and expertise of AT. Above all, there is no national priority list for AT and it is not listed in the national equipment and medicine list (MoE, 2021).

In order to our country, the Ethiopian government has made significant efforts to improve the accessibility and utilization of assistive technology for academic achievement of students with disabilities in resource centers. Assistive technology plays a crucial role in enhancing the educational experience for students with disabilities and it enables them to access information, communicate effectively, and participate fully in academic activities.

For these children to have equitable opportunities to achieve academically, resource centers must be accessible and make effective use of assistive technology. Within the research domain, prior research has not addressed the crucial matter of assistive technology utilization and accessibility in relation to the academic success of students with disabilities. Thus, the purpose of this study is to investigate how accessible and how assistive technology is currently used in resource centers to support the academic success of students with disabilities.

1.2. Statement of the problem

This study, aims to investigate Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in resource center: The Case of Mizan Aman Town, Selected Primary School and it should address the challenges that hindering the accessibility and utilization of assistive technology for academic achievement of students with disabilities (specially students with Visual, Hearing and Physical Impairment) in school setting.

In Mizan Aman Town there are gaps like, the lack of availability and affordability of assistive technology devices for students with disabilities and lack of training and awareness among utilizing assistive technologies, challenges in learning how to use the technology effectively, Many families may not have the financial means to purchase these expensive devices, which can hinder the students' ability to fully engage in their education and Students with disabilities face unique challenges in the academic setting. Whereas resources may be limited, it is crucial to assess whether students with disabilities have not equal opportunities to access assistive technology. The problems should have potential barriers such as lack of funding, inadequate training for teachers, or insufficient availability of appropriate assistive devices. On the other hand, there are some limited assistive devices were available in resource centers.

But those devices were put in resource center without functions. Conducting this research, valuable insights can be gained regarding the challenges faced by students with disabilities and how these can be addressed through improved accessibility and utilization of assistive technology.

However, there is a study that focused on visually impaired students at Ethiopia's Haramaya University. The studies focused, on availability, knowledge, and usage of assistive technologies by visually impaired students at Ethiopian higher education institutions were the main emphasis of this study. Its three main themes knowledge and comprehension of assistive technologies, accessibility and availability of assistive technology resources and services, and use and administration of assistive technologies were developed inductively. The results of the study demonstrate that the availability and use of assistive technologies at the university were negatively impacted by a number of factors, including a lack of awareness among students with visual impairments, instructors, and practitioners in the field; an improper organizational arrangement that dichotomizes and diverges student disability services provision from qualified professionals in the area; and the absence of policies and guidelines for managing assistive technologies (Dawit Negassa&, 2022).

Additionally, a study on the topic of "Utilization of Assistive Technology for Effective School Library Service Delivery to Students with Disabilities" was conducted by the University of Nigeria. According to the report, there is insufficient accessibility to assistive technologies in Nigeria for providing children with disabilities with appropriate school library services. Additionally, very few assistive technologies aside from hearing aids and braille technologies were used to deliver school library services in an efficient manner. The main obstacles to using assistive technology in Nigerian schools to provide services to students with disabilities are a lack of government support, a lack of adequate assistive technology in the libraries, and insufficient funding for the libraries themselves (Evangel Obim & Oscarand Akpokurerie, 2022).

This makes this study different from the two previously mentioned studies from the University of Nigeria and Haramaya University of Ethiopia. These two studies focused on postsecondary education, and their conclusions included inadequate assistive technology, a lack of government assistance, and a lack of awareness. However, the researcher's attention was drawn to this title and primary school, where everything began at a lower level. Everything is easier to manage on the top level if we have a decent basement in the lower stage or class. Similar to how lower-level or

early-stage students with impairments were accustomed to technology, upper-level children also find it quite easy to respond to it. In light of this, the study closed a knowledge gap that affected the entire school community, including instructors, administrators, and other interested parties who dealt with students with disabilities. It also changed ideas about what impaired students needed to succeed academically on their own. Furthermore, the study investigated the accessibility and utilization of assistive technology and the frequency with which students with disabilities use it in resource centers situated in the Mizan Aman Town selected primary schools.

Generally, this research fills a crucial gap like, ongoing training and support for teachers and staff, understanding the specific barriers that prevent students with disabilities from accessing and utilizing assistive technology and how students with disabilities are faring in the education system.

As a result, the study seeks to answer the following important questions:

1. What is the present Status of assistive technology accessibility in resource centers for students with disabilities in Mizan Number one and Aman Number one school?
2. What obstacles prevent students with disabilities from using assistive technology?
3. What is the extent of the academic achievement of students with disabilities in the schools setting?
4. What is the relationship between accessibility/utilization of assistive technology and academic achievement of students with disability who attend resource center?

1.3. Objectives of the study

The study has included the following general and specific objectives.

1.3.1. General Objective

To investigate the Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in resource center the Case of Mizan Aman Town, Selected Primary School.

1.3.2. Specific Objectives

The specific objectives of the study are:-

- To evaluate the present Status of assistive technology accessibility in resource centers for students with disabilities in Mizan Number one and Aman Number one school.
- To determine the barriers preventing disabled students from using assistive technology.
- To examine the extent of the academic achievement of students with disabilities in the schools setting.
- To look at the relationship between accessibility/utilization of assistive technology and academic achievement of students with disability who attend resource center.

1.4. Significance of the study

The research title "Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in resource center" holds significant importance in the field of education, policy-making, practice, research participants, researchers, and literature.

This research title sheds light on the crucial role that assistive technology plays in enhancing the academic achievement of students with disabilities. By exploring the accessibility and utilization of such technology, policymakers can make informed decisions to ensure equal opportunities for all students. For practitioners working with students with disabilities, this research title provides valuable insights into the potential benefits of incorporating assistive technology into their teaching strategies. It highlights the importance of creating inclusive learning environments that cater to diverse needs. Research participants involved in this study will have the opportunity to contribute to a growing body of knowledge on how assistive technology impacts academic achievement. Their experiences and perspectives will enrich the understanding of this complex issue.

As researchers, this research title presents an exciting opportunity to delve deeper into the relationship between assistive technology and academic success for students with disabilities. It opens up avenues for further exploration and analysis within this important area of study.

Finally, for literature in the field of special education and disability studies, this research title adds a new dimension to existing scholarship by highlighting the significance of accessibility and utilization of assistive technology in improving academic outcomes for students with disabili-

ities. It contributes to a more comprehensive understanding of how technological advancements can support inclusive education practices.

1.5. Scope of the study

The study is limited to two primary schools in Mizan Aman Town, Bench Sheko Zone. It includes 60 primary school teachers, 2 school directors, 1 supervisor, Education office Head and 2 Education experts from City and Zone Education office. It focuses on a marginalized group within the education system, namely students with disabilities. It aims to investigate the Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in resource center the Case of Mizan Aman Town, Selected Primary School.

1.6. Limitations of the Study

The research title on Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in resource center the Case of Mizan Aman Town, Selected Primary School provides a valuable insight into the challenges faced by students with disabilities in accessing educational resources. However, there are limitations to this research that need to be acknowledged. Firstly, the scope of the research is limited to a specific geographic area and may not be generalizable to other regions. The findings may not be applicable to students with disabilities in different contexts or resource centers. Secondly, the research may not take into account the diverse needs of students with disabilities. Each student may require different types of assistive technology depending on their individual abilities and challenges. Lastly, the research may not address the socio-cultural factors that impact access and utilization of assistive technology for students with disabilities. Factors such as stigma, discrimination, and lack of awareness can significantly affect academic achievement. In conclusion, while this research provides valuable insights into the challenges faced by students with disabilities in Mizan Aman Town, it is important to consider its limitations and implications for future research and policy development in this area.

1.7. Operational Definition

Accessibility: refers to the design and implementation of products, services, and environments that can be accessed and used by individuals with disabilities and ensuring that everyone, regardless of their physical or cognitive abilities, has equal access to information, resources, and opportunities.

Academic Achievement: generally refers to a student's ability to successfully complete tasks, demonstrate knowledge and skills, and meet educational goals. When it comes to scoring academic achievement, there are typically two categories: lower scores and higher scores. Lower scores may indicate that a student is struggling to grasp concepts or meet expectations, while higher scores suggest that a student is excelling academically.

Assistive Technology: refers to any device or tool that helps individuals with disabilities perform tasks that they may have difficulty with on their own.

General Teachers: is someone who possesses a wide range of knowledge and skills in various subjects, allowing them to teach a diverse group of students. They are responsible for imparting knowledge, fostering critical thinking skills, and promoting a love for learning in their students.

Influence: is the ability to have an impact or effect on someone or something, often resulting in a change in behavior, thoughts, or actions.

Resource center: is a centralized location where individuals can access a variety of tools, information, and support services to help them achieve their goals.

Special Teacher: is someone who goes above and beyond the call of duty to inspire, educate, and support their students. They possess a unique combination of knowledge, passion, and dedication that sets them apart from others in their field.

Students with disabilities: are individuals who face challenges in one or more areas of their lives, such as physical, cognitive, emotional, or behavioral. These challenges may affect their ability to learn and participate in educational settings without additional support or accommodations.

Utilization: is the act of making use of something in an effective or practical manner and it involves taking advantage of resources, skills, or opportunities to achieve a desired outcome.

1.8. Organizations of the Study

The organization of this study was having six chapters. The problem and its solution are presented in the chapter one. A survey of related literature was covered in the second chapter. The research design and methodology were covered in the third chapter. The data display and analysis are covered in the fourth chapter. The discussion was covered in the fifth chapter and the study's summary, conclusion, and recommendations were contained in the last chapter six. At the final references and appendices were included.

CHAPTER TWO: REVIEW RELATED OF LITERATURE

2.1. Introduction

A vital component of any academic study is the goal of this review of related literature. By providing insights into current knowledge and theories about the subject, it lays the groundwork for the investigation. Researchers can find gaps in the present literature and develop research topics that advance the subject by looking at earlier work. Therefore, the purpose of this explanatory mixed methods study was to look into how accessible and how students with disabilities used assistive technology in resource centers.

2.2. Assistive Technology

In this study, "assistive technology" Any object, piece of machinery, or product system whether purchased commercially off the shelf, altered, or customized that helps a child with a handicap increase, maintain, or improve their functional abilities is referred to as an assistive technology device. People with disabilities can now participate in activities that would otherwise be too difficult or impossible for them thanks to assistive technology. Mobility aids, such as wheelchairs, scooters, walkers, canes, crutches, prosthetic devices, and orthotic devices, are a few instances of assistive technology. AT can give access to play, school, community, and work activities in addition to facilitating communication with others. It frequently has the power to completely change everything, allowing early children, teenagers, and people with disabilities to live more effectively and independently. It can help students become more independent in their reading, writing, math, and organizing skills (Network, 2008).

People with disabilities can live more independent and satisfying lives and participate fully in society with the help of assistive technology (AT). However, for a number of reasons, people with disabilities in many countries only have extremely limited or occasionally no access to AT. Lack of focused policies, easily available organizations, specialists, and procedures that can give AT to individuals who might benefit from it is one of the main causes in low resource settings. Additional causes include low knowledge, the unavailability of AT devices, problems with cost, and numerous other factors (WHO, 2013).

Furthermore, AT can help with the provision of curriculum access for general education. The range of assistive technology (AT) encompasses both high-tech and low-tech items, such as voice-activated tablets, laptops with reading and writing applications, and eye gaze communication systems. Low-tech items include graphic organizers, reading guides, and customized toys and pencils. AT can be used at any age or grade level, and there are no prerequisites. The way that AT is used can change throughout time based on individual needs and the state of technology. Accessible Assistive Technology: Children with sensory processing impairments might need to employ accessibility features, add-on software, or hardware to help them perceive and/or use computers because more and more educational materials are being given digitally (Hampton et al., 2020).

Assistive technology plays a crucial role in enhancing the academic achievement of students with disabilities. By providing specialized tools and resources, assistive technology helps to level the playing field for students with diverse learning needs. One key way that assistive technology influences academic achievement is by increasing access to educational materials. For students with visual impairments, screen readers and text-to-speech software can make textbooks and other materials accessible. Similarly, speech recognition software can help students with physical disabilities to complete written assignments more efficiently.

Additionally, assistive technology can support students with cognitive disabilities by providing tools for organization, memory enhancement, and task management. These technologies can help students stay on track with assignments and deadlines, ultimately leading to improved academic performance. Finally, assistive technology has a significant impact on the academic achievement of students with disabilities by increasing access to educational materials and providing support for cognitive challenges. By leveraging these tools effectively, educators can help all students reach their full potential in the classroom.

2.2.1. Levels of Assistive Technology

With the help of assistive technology, people with disability can now live independent and satisfying lives. It has become an indispensable tool. There are many different types of assistive technology available, from high-tech gadgets like speech recognition software and robotic exoskeletons to low-tech ones like canes and hearing aids.

Low-tech technologies are those that are simple to operate and typically run off of electricity. The time required for training to operate these gadgets is not very long. Frequently, these are only called accommodations or changes, and teachers might not be aware that they have already taken into account and integrated AT. Low-tech devices frequently serve as the basis for higher-level assistive technology, helping to acquire abilities that carry over into more important stages of participation or independence. Systems of higher technology include a broad spectrum of levels for every facet of life skills. These systems could have intricate internal structures or architecture. Equipment designed to meet particular handicap problems and jobs that need to be performed is specialized by manufacturers. To fully utilize the possibilities of such devices, the user may need to undergo specialized training. Nonetheless, the majority are "user friendly," meaning that the user may effectively utilize the gadget without needing to understand how it operates (Network, 2008).

2.2.2. Benefits of Using Assistive Technologies

Access to assistive technology is a human right, and a precondition for equal opportunities and participation. The majority of people who could benefit from assistive technology do not have enough access, despite the fact that demands are growing. However, assistive technology will probably become necessary for everyone at some point in their lives, particularly as they get older. For kids with impairments, having access to assistive technology is frequently essential to their early development, education, involvement in extracurricular activities, civic engagement, and job readiness. People with impairments who have used assistive technology their entire lives may require more goods in addition to their current functional issues because of a slow, age-related decline. Maintaining and enhancing people's functional capacities requires access to inexpensive, secure, and efficient assistive technology (World Health Organization, 2022).

The benefit of using assistive technologies is that they help to level the playing field for students with disabilities, allowing them to participate in educational activities on an equal footing with their peers. It can improve students' independence and self-confidence by enabling them to complete tasks that may have been challenging or impossible without assistance. Moreover, assistive technologies can increase engagement and motivation among students with disabilities by making learning more interactive and accessible.

For instance, screen readers can convert text into audio format, making it easier for visually impaired students to access information from textbooks or online resources.

2.2.3. Barriers to Using Assistive Technology

The categories of barriers that persons with disabilities encounter, which are often exacerbated for those living in rural areas or poor urban settings, include the following:

2.2.3.1. Physical and Environmental Barriers

The literature makes clear that a large number of African users of assistive technology (AT) struggle with day-to-day activities because of environmental and physical limitations. The main physical obstacle is that buildings in Africa are inaccessible to people with sensorimotor impairments. Frequently, public buildings and educational establishments fail to adhere to accessibility regulations or possess assistive amenities that were intended for broad usage instead of being specifically designed for individuals with disabilities. Examples include the lack of braille services, the absence of elevators in multi-story buildings, or the carelessness with which the locations of accessible assistive facilities are marked. It has been demonstrated that environmental obstacles, such as challenging topography like steep hills and unpaved roads or periodic flooding in some parts of Africa, aggravate problems faced by rural AT users. Older people who lack the strength to navigate the terrain and people with mobility disabilities who feel their gadgets are dangerous in these circumstances are burdened by these environmental restrictions. Loss of freedom and the requirement for extra AT devices to enhance access to indoor and outdoor services can result from these environmental and physical obstacles. Ensuring that persons with disabilities are included in the design of public facilities and services should be paramount, as participatory processes has been identified as essential to ensure the mainstreaming of accessibility (Addis, 2020).

Physical and environmental barriers are obstacles that impede access to resources, services, and opportunities for individuals. These barriers can manifest in various forms, such as lack of wheelchair accessibility, limited transportation options, or inadequate infrastructure. One of the most common physical barriers is the lack of proper accommodations for individuals with disabilities. This can include buildings without ramps or elevators, making it difficult for people with mobility impairments to navigate their surroundings independently.

2.2.3.2. Financial Limitations and Lack of Access to AT Service

The main obstacles to obtaining AT devices in Africa have been found to be financial and resource limitations. Because of this, a sizable fraction of people with disabilities are left without access to assistive technology. The extremely poor socioeconomic position of the populace in rural areas impedes the spread of AT substantially more than in metropolitan ones. Certain nations have implemented rules that recognize the importance of providing assistive technology (AT) to those with disabilities; nevertheless, they have not yet established a well-defined approach to facilitate the procurement of assistive devices.

Not only are there financial barriers to accessing AT, but there is also a dearth of availability for prescription services and technical AT repair. There are few services available in remote locations, and some users must buy AT without having the chance to receive an in-person assessment. It has been observed that a deficiency of training facilities hinders the usability and effectiveness of AT in both physical and digital contexts. It might be challenging for those living in rural locations to locate a technician who is qualified to fix assistive technology, particularly wheelchairs. Lack of accessories and skilled technicians makes it difficult for AT service and repair providers to carry out their obligations, even in the presence of AT education services and health clinics. Longer shipping times make it impossible to provide right away. Moreover, access to services has frequently been hampered by the need for transportation to AT service provision appointments. This barrier exacerbates the issue for rural AT users who frequently have to travel great distances because it is linked to environmental barriers that make mobility difficult (Addis, 2020).

2.2.3.3. Policy Implementation Gap

As per the Convention, assistive technologies must be reasonably accessible, inexpensive, and available to all individuals with disabilities, regardless of their age, gender, or kind of impairment. Political, appropriate government structures to support implementation, and country-level policy that directs implementation are necessary for the effective execution of international policy in each nation. Nonetheless, a lot of African states don't adequately carry out laws and regulations to guarantee the availability of assistive technology. For example, a Malawian study has shown that, in spite of several sector-specific rules and laws, there is still insufficient positive

input to enable individuals with intellectual disabilities to obtain assistive technologies when taking into account factors such as availability, affordability, suitability, and quality. It has also been proposed that the absence of blind representation among Nigeria's policy-making members is a major contributing factor to the country's dearth of information and communication technology resource centers for the visually impaired. For a variety of reasons, such as a dearth of experienced workers for AT device maintenance and training, inadequate infrastructure, and a relatively small number of providers, policy implementation issues in many African countries are especially severe in rural areas (Addis, 2020).

2.2.3.4. Societal Awareness Problem and Information Gap

Due to societal cultural and religious views, there is a misperception and lack of awareness about disability in developing countries, particularly Africa. People with disabilities frequently experience abuse and prejudice as a result of this, even from members of their own families. As a result, many families don't believe that if their kids used AT, they would become more powerful or well-liked by others. "People with intellectual disabilities are believed to be a curse upon the family and are consequently severed and hidden from the public," according to a Malawian study, suggesting that they do not require exposure to assistive technology. Numerous studies have revealed that people with various disabilities experienced difficulties due to a lack of knowledge rather than a lack of aptitude or intelligence. Regarding the resources, choices, instruments, and technologies that could help people with disabilities integrate more successfully into society at large and reach their full potential, there was clearly a knowledge vacuum (Addis, 2020).

2.2.3.5. Attitudinal barriers

Misconceptions and negative views about persons with disabilities in society are some of the most common barriers that prevent people with disabilities from having fair access. According to social model understandings, attitudes, beliefs, and behaviors toward and about people with disabilities constitute attitudes that not only make life more difficult for them, but also, through active or passive discrimination, act as obstacles that keep people with disabilities from fully and equally participating in society.

These obstacles are the result of a combination of individual and societal misconceptions, uncertainties, or anxieties about illness, disability, or impairment (Bridger & Evans, 2020).

2.3. Accessibility

In order for people with disabilities to live freely and take part fully and equally in society, accessibility is a requirement. The idea that people with disabilities would not have equal opportunities for participation in their respective societies if they did not have access to the physical environment, transportation, information and communication, including information and communications technologies and systems, and other facilities and services that are open or provided to the public, is at the center of this review. Therefore, ensuring accessibility is the process of removing environmental and attitude barriers that prevent people from participating equally (Croasmun, 2011). It is also covered by all five of the cross-cutting themes of the Strategy, which are reasonable accommodation, universal design, and participation, coordination, and cooperation. Its strong relationship to the theme of reasonable accommodation and universal design is especially noteworthy (Lawson Anna, 2017).

Accessibility is crucial in ensuring that all students, regardless of their abilities or disabilities, have equal opportunities to learn and succeed. This includes providing accommodations and support for students with disabilities, as well as creating inclusive learning environments that cater to diverse learning styles. One key aspect of accessibility in education is physical access to facilities and resources. Schools must ensure that their buildings are wheelchair accessible, have ramps and elevators for those with mobility impairments, and provide assistive technologies for students with sensory impairments.

2.3.1. policies on accessibility

An organization's commitment to ensuring accessibility and inclusion for people with disabilities in all facets of its operational and normative activity is reflected in its policy on disability inclusion and accessibility, which is a public document. This inevitably includes the gathering place conferences and meetings where decisions are made and discussions about this kind of work are carried out. People will be more likely to trust an organization to walk the walk when it comes to making sure that people with disabilities are fully engaged in all relevant stages of its work if it has a consistent policy that addresses both the technological and physical aspects of accessibility

as well as the necessity of inclusion that is embedded in the rights of people with disabilities(*Enhancing Accessibility for Persons With Disabilities To Conferences and Meetings*, 2018).

2.3.2. International standards for accessibility

Organizations under the United Nations system do not recognize or use any international accessibility guidelines. Nearly all businesses only make an effort to comply with the accessibility requirements specified in the building codes and disability acts of the host nation, depending on where they are physically located. UNICEF is an exception to this rule, as table 1 outlines the three accessibility levels that apply to all of its offices worldwide. At least level 1 accessibility is required for all UNICEF offices, new buildings, offices moving to new locations, and offices undergoing structural or layout changes. The UNICEF Greening and Accessibility Fund provide additional money or co-financing for projects that enhance office accessibility. The Inspector believed that all United Nations system entities would gain by comparing their current facilities to UNICEF standards and creating minimal accessibility requirements for use across the entire organization(*Enhancing Accessibility for Persons With Disabilities To Conferences and Meetings*, 2018).

Table 1: Accessibility levels for UNICEF facilities

Level 1: Minimum	Level 2: Moderate	Level 3: High-level
1. Entrance to building is accessible (adequate doorway width; ramp for entrance with steps; accessible elevator if office on top floor).	2. Attains level 1 accessibility.	1. Attains level 1 and level 2 accessibility.
2. One accessible work station with clear pathway from entrance, bathroom and meeting room; room should have sufficient space to maneuver; furniture should meet specific requirement of staff member with disability.	3. More than one accessible work station, and additional ones made accessible upon request.	2. Accessible work stations on every level or floor.
3. One accessible meeting room (accessible entrance, sufficient maneuvering space for person using assistive devices, easy reach to meeting and	4. Two accessible meeting rooms.	3. All meeting rooms accessible.
	5. Accessible toilet on more than one floor.	4. 50 per cent of toilets accessible.
	6. Easy circulation in most parts of the building: one vertical accessible circulation in building (lift, stairs and ramps) and horizontal circulation on each floor (level corridors with adequate width; floor ramps for differences in level). Common ar-	5. All common areas accessible.
		6. At least 4 per cent of provided parking reserved for accessible-designated parking spaces.
		7. Signage is displayed (e.g., indication of accessible toilets and parking spots).
		8. Controls and switches can

2.5. Academic Achievement

Academic achievement is the degree or success level of competency in a particular field when it comes to academic or scholastic work. The most often used methods for interpreting students' academic achievement in a particular subject area are accomplishment quotients, academic or educational age, and achievement quotients. Additionally, academic achievement is defined as the knowledge or competence acquired in a subject as measured by test results or teacher-assigned grades. The term "performance" usually refers to the pupils' learning objectives. The learning outcome modifies the pupils' behavioral patterns as a result of learning through various subjects. According to Antičević, (2018), learning has an impact on students' cognitive, affective, and psychomotor domains.

Academic achievement is a term used to describe the level of success a student has reached in their academic pursuits. This can be measured through various means such as grades, test scores, and overall performance in coursework. Achieving academic success requires dedication, hard work, and a strong commitment to learning.

2.6. Theoretical framework

Numerous research works have examined the elements that influence technology acceptance in an information systems setting, leading to the emergence of numerous acceptance models, each with a unique collection of criteria that influence acceptance. Over the years, a great deal of work has gone into validating and expanding the models, which has led to their evolution and improvement. This study was used the following theoretical frameworks.

2.6.1. Universal Design for Learning (UDL)

This theoretical framework attempts to give all pupils, including those with disabilities, equal chances. Using a variety of representational, expressive, and engaging methods, UDL facilitates students' access to and involvement in the learning process. Furthermore, by fostering an inclusive and accessible learning environment that encourages success for all students, Universal Design for Learning significantly contributes to the support of students with disabilities. It would also entail investigating the ways in which assistive technologies can facilitate learning and involvement in diverse educational endeavors. A set of guidelines known as universal design for

learning (UDL) is used to create curricula that give every student an equal chance to learn. All students, regardless of ability, handicap, age, gender, or linguistic and cultural background, are intended to benefit from UDL. UDL offers a framework for creating objectives like building, playground, furniture, consumer products, strategies, resources, and evaluations that cater to all students, including those with a range of needs (Rose 2001).

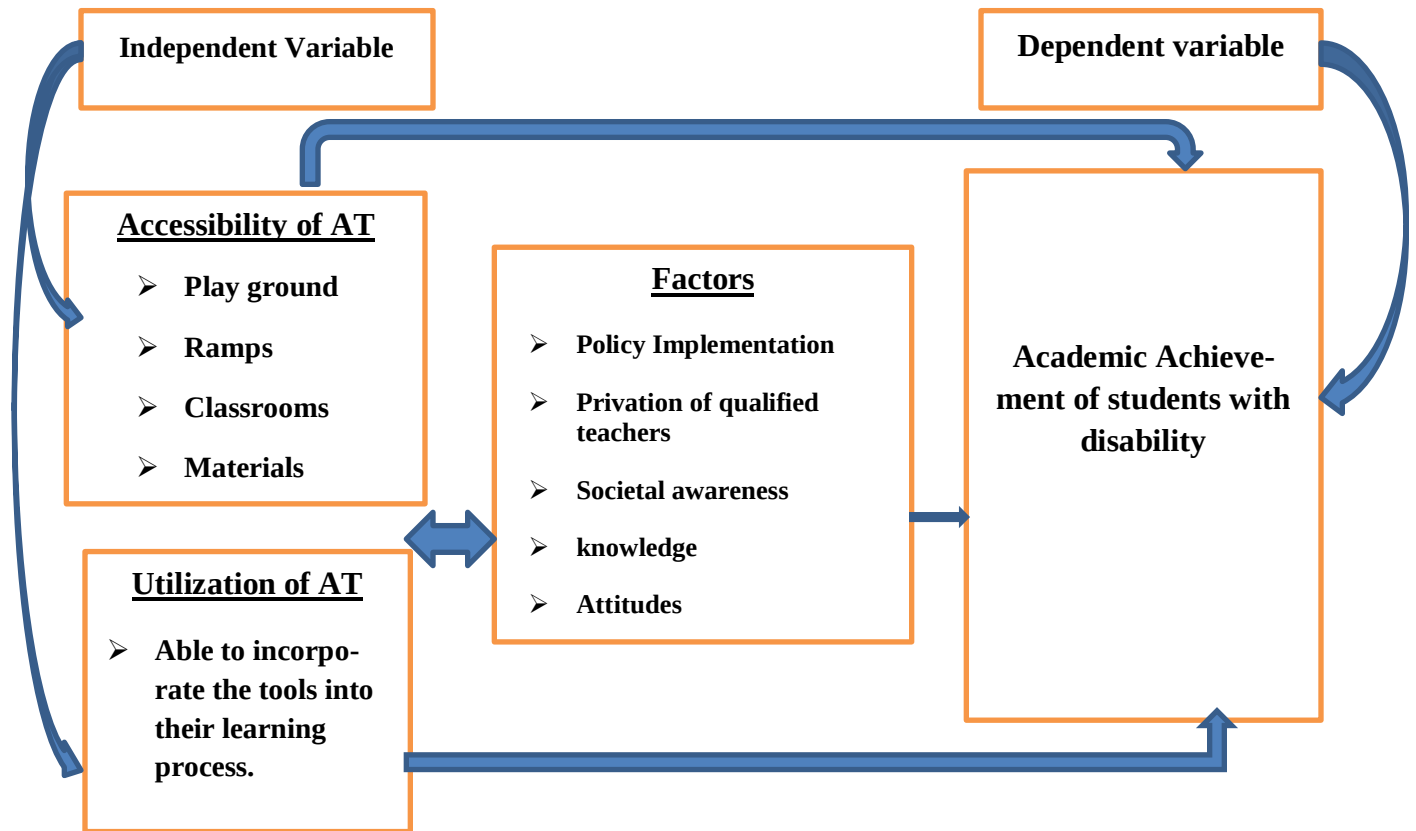
Universal Design for Learning (UDL) is a theoretical framework that aims to provide all students, including those with disabilities, equal opportunities to access and participate in education. This framework is based on the idea that instructional strategies and materials should be designed from the outset to accommodate the diverse learning needs of all students. By incorporating multiple means of representation, expression, and engagement, UDL seeks to remove barriers to learning and create an inclusive educational environment.

2.6.2. Technology Acceptance Model (TAM)

This framework facilitates comprehension of how people view and adopt new technology. TAM can be quite helpful in assisting people with disabilities with meeting their educational needs. Teachers can identify which technologies will work best for children with disabilities by looking at things like perceived usefulness and simplicity of use. Teachers can evaluate these technologies' efficacy and customize them to each student's unique needs by using TAM. Additionally, it can look at things that affect how willing they are to accept and use these technologies (Alshahrani, 2020).

The creation of the technology acceptance model and its corresponding measurements has yielded noteworthy theoretical advancements and substantial practical benefits. Users' motivation to embrace a variety of technologies may now be assessed thanks to the model's implementation in usability testing. Understanding the cognitive and affective aspects governing the effect of system characteristics on technology acceptance was made easier by the establishment of constructs that shown a strong and substantial association with usage behavior (Marikyan & Papagiannidis, 2023). The Technology Acceptance Model offers a strong theoretical framework for understanding how students with disabilities interact with technology.

2.7. Conceptual Framework of the Study



Source: Compiled by Researcher (2024)

Academic achievement among students with disabilities is a dependent variable that is significantly influenced by the independent variables of accessibility assistive technology and utilization assistive technology. Utilization is the degree to which students are able to successfully integrate assistive technology into their learning process, whereas accessibility is the availability and usability of this technology. Students with disabilities may find it difficult to completely benefit from assistive technology when these variables are hindered by things like a lack of funding, inadequate training for teachers, or a lack of knowledge about resources.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Description of the Study Area

The main town and one of the four capital cities of the South West Ethiopia Peoples' Region is Mizan Teferi, also known as Mizan-Aman City Administration. In addition, Mizan serves as the administrative hub of the Bench Sheko Zone in Ethiopia's South West Ethiopian Peoples' Region. The city is conveniently located 568, respectively, south-west of Addis Ababa. Mizan Teferi is situated at an elevation of 1451 meters and has latitude and longitude of 7°0'N 35°35'E / 7.000°N 35.583°E. It is also roughly 221 kilometers southwest of Jimma. Mizan Teferi with the nearby town of constitute the distinct woreda known as Mizan Aman. The woreda of Dehub Bench surrounds this. The average daily temperature is 26.65 °C, with an annual maximum rainfall of 848 mm. The climate condition ranges from sub-humid mild to hot (Niland et al., 2020).

3.2. The Research Design

The Explanatory Sequential Mixed-Methods Design served as the researcher's master plan, including the techniques and protocols for gathering and evaluating the necessary data. The goal of this study was to find out how accessible and how often assistive technology is now used by students with disabilities to succeed academically at resource centers in a particular area in Ethiopia. Both quantitative and qualitative information was gathered. Initially, a survey questionnaire was being sent to general teachers in order to collect numerical data regarding the accessibility and use of assistive technology as of right now. This was highlighting any gaps or restrictions in the resource center's current offerings and offer insights into them.

Furthermore, a qualitative interview was being conducted with significant stakeholders, including the principal of the school, the supervisor, and woreda and zone education office experts. In-depth discussions of their viewpoints, experiences, and recommendations for enhancing accessibility to assistive technology were covered in these interviews. In addition, focus group discussions (FGD) were being conducted by resource center facilitators and iterant teachers, as well as special needs education instructors, to evaluate how well children are using the assistive technology that is readily available. Lastly, the researcher was made document analysis and direct observations.

3.3. The Research Method

This study was carried out using an explanatory mixed-methods approach. In a single research project, researchers using a mixed methodologies approach combine techniques for gathering and evaluating data from both quantitative and qualitative research approaches (Khanna, 2022). Firstly, a quantitative survey was being administered to collect data on the current state of accessibility and utilization of assistive technology in the resource center. It is most commonly used survey method. It is list of questions, that is, closed-ended and open ended for which respondent gives an answer, face to face. A questionnaire is a form prepared and distributed to respondents to secure responses to certain questions (Bhome et al., 2013). This survey was including questions about the types of assistive technology available, their functionality, and the extent to which they are being utilized by students.

Additionally, a qualitative interview was being conducted with key stakeholders such as school principal, immediate supervisor, Administrators, and education experts. This interview was providing insights into their perspectives on the challenges faced by students with disabilities in accessing and utilizing assistive technology. Moreover, an observation was being made within the resource center to gather information on how students interact with different types of assistive technology.

The collected data from surveys were analyzed using statistical techniques such as descriptive statistics and then interviews, Focus group discussion FGD, document analysis and observation were analyzed by content analysis. This analysis was helping identify patterns and trends related to accessibility and utilization of assistive technology for students with disabilities.

3.4. Sources of Data

The study was used both primary and secondary sources of data.

Primary sources of data:- The researcher beliefs that the major data source of the study are include Mizan Amen City Administration education office, School principal, Special Needs education teachers, general teachers and supervisors because they are the front line respondents and able to share their experiences on the existing problems.

Secondary sources of data: - Secondary data can be collected through books, published articles, and internet and syndicate services (Bhome et al., 2013). So, a secondary source for this research is also included literature review and other relevant materials are used as the secondary source of data in Mizan Amen City Administration education office.

3.5. Population of Sample Size and Sampling Techniques

3.5.1. Target Population of the Study

This study was conducted on the population of primary school general and Special Needs teachers, school principals, supervisor, woreda and Zone Education office expert, and City Administration education office head were selected for this research. Therefore there are 3 resource centers in Mizan Aman City Administration organized by government and GDP. From those resource centers 2 School namely Mizan Primary No-1 and Aman Primary school resource was selected for the study using by purposive sampling techniques. Because, the researcher was used this techniques by judgmental; by results of financial constraints, availability and lived with experienced teachers around those resource centers.

Table 2: Target population determination and Selected Samples

R.No	Population	Target popu- lation Size	Selected Samples	Sampling Technique
1.	General Teachers from selected School	165	53	Simple random
2.	Special Need Teachers from selected School	15	7	Purposive
3.	School principals from selected School	4	2	Purposive
4.	supervisor from selected School	2	1	Purposive
5.	Education office Head	1	1	Purposive
6.	Education office expert	1	1	Purposive
7	Zone Education office expert	1	1	Purposive
Grand Total		189	66	

3.5.2. Sample Size and Sampling Techniques

Sampling and sample size are crucial issues in pieces of quantitative research, which seek to make statistically based generalizations from the study results to the wider world. To generalize in this way, it is essential that both the sampling method used and the sample size are appropriate, such that the results are representative, and that the statistics can discern associations or differences within the results of a study (Bhome et al., 2013). From 3 resources centers the researcher was selected 2 sample sizes to incorporate in the study. Simple random Sampling is employ to select the participants from the selected school.

3.6. Data Gathering Tools

In this descriptive mixed methods study, quantitative and qualitative data was collected, allowing to the research problems. In order to validate and clarify the information gathered, different instruments are used to gather data from the participants on the same time. Based on this, the researcher was collected data from respondents by using a combination of quantitative and qualitative methodologies, including questionnaires, interviews, Focus Group Dissuasion (FGD) document analysis and observation.

3.6.1. Questionnaire

Questions may take two general forms: they may be “Open ended” questions, which the subject answers in his own words, or “closed” questions, which are answered by choosing from a number of fixed alternative responses (Bhome et al., 2021). Due to a questionnaire’s adaptability for a survey study with a large number of respondents, it was mostly use for data collection. In this study there were both closed-ended and open-ended questions on the survey were writing by English and then translated Amharic language. Those questions were being surveyed, by the researcher different types of questions were being dispatched and the information were being collected from 53 general teachers those who were participated in this research.

3.6.2. Interviews

The interview method of collecting data involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses. This method can be used through personal interviews and, if possible, through telephone interviews (Bhome et al., 2013).

Depending on this study there were interview guided questions were prepared by the researcher was in-person, it conducted with experienced experts, for information being conducted to decision, there were six key persons were involved one-on-one, with by using Amharic languages to communicate for a one up to half time and takes place in the professional's work place.

3.6.3. Focus Group Discussion

It is rapidly becoming one of the major research tools to understand people's thoughts and feelings. It is usually conducted by inviting six to ten people to gather for a few hours with a trained moderator to talk about a product, service or organization (Bhome et al., 2013). As this study the researcher was conducted seven special needs education teachers' to gather in-depth insights and opinions, by the using Amharic language at the two hour focus group discussions, takes place in the professional's work place.

3.6.4. Document Analysis

Document analysis is the process of reviewing or evaluating documents both printed and electronic in a methodical manner. The document analysis method, like many other qualitative research methods, involves examining and interpreting data to uncover meaning, gain understanding, and come to a conclusion (Bowen, 2009). On this study the researcher was used to check assessment formats help to understand how much teachers were assessing students' academic progress in a meaningful way during the classroom instruction. Mark list of students who use assistive technology and who didn't use assistive technology.

3.6.5. Observation

Observation becomes a scientific tool and the method of data collection for the researcher, when it serves a formulated research purpose, is systematically planned and recorded and is subjected to checks and controls on validity and reliability. Under the observation method, the information is sought by way of investigator's own direct observation without asking from the respondent (Mahghani & Afjei, 2017). Accordingly, on this research the researcher was prepared observation checklist and went to the field of study cite to get real data from the actual event. Surly is there school; have safe playground, ramps, classroom, and materials in resource centers and also how students with disability were treated and how were the school environments were practices inclusive education setting

3.7. Data Gathering Procedures

Questionnaires and guided interview questions were prepared based on these theories and research works in order to collect data from relevant bodies. To obtain more dependable information, the tools have been designed and translated into Amharic.

Furthermore, on this research the researcher used the questionnaires to gather information from a large number of 53 participants quickly and efficiently gather data and analyze it statistically, interviews six key persons (two school principals, one supervisor, city administration education office head, woreda and zone education experts) to the in-depth exploration of topics through open-ended questions and to ask follow-up questions and probe for deeper insights, Focus groups bring together seven group members were discuss to specific topics or issues in a collaborative setting, document analysis and directly observed on the events in their natural setting without interference.

3.8. Pilot Study

Based on this study, a researcher did an initial inquiry at the Mizan Aman City Administration. Before conducting a full research project, a pilot study was undertaken at one of the three resource center schools, Mizan #2. However, the primary research was carried out at the two remaining schools, Mizan #1 and Aman #1. As a result, Dźwigoł (2020) employed to test the research validity and reliability of the research tools.

3.8.1. Validity of the Research Tools

The degree to which a research tool measures what it is supposed to measure is referred to as validity. According to Anastasiadou (2011), it is crucial for researchers to demonstrate the validity of their instruments using a variety of techniques, including construct validity, criterion-related validity, and content validity. Initially, the researchers constructed the tools to guarantee their validity for the clearly communicated to the participants, who also received instruction on how to complete, evaluate, and provide comments on the questionnaire's features, item length, item simplicity, and content significance.

3.8.2. Reliability of the Research Tools

When a research tool is utilized often and yields consistent results, it is said to be reliable. To make sure that the data gathered is reliable and trustworthy, it is critical for researchers to evaluate the dependability of their instruments (Anastasiadou, 2011). An expert from Hawassa University's department of special needs and inclusive education was give questionnaires to complete in order to determine the content validity of the materials. Expert recommendations was take into consideration. A reliability test is a crucial tool for determining how consistently an attribute is intended. The reliability result with Cronbach's Alpha is .841 from total numbers of 38 items.

Table 3: reliability test statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.841	38

3.9. Methods of Data Analysis

To begin with, the procedures the data were collected through surveys, interviews, Focus Group Discussion, document analysis and observation. These methods were help gather information about the availability of assistive technology devices in resource centers, their accessibility to students with disabilities. Additionally, secondary data from relevant literature reviews was being analyzed to provide a comprehensive understanding of existing studies on this topic. Once all the data is collected, it needs to be organized systematically for analysis.

The scores of each item quantitative data from questionnaire are encoded and analyzed by using SPSS. Were organized, statistically compiled and imported into SPSS 25 to obtain the mean score and standard deviation of each item. As the Likert- scale was used to identify the level of agreement, rating scales (never to always) ensures the extent of teaching and curriculum adaptation practices as well as learning environment. As the percentage used to analyze the background information and attitudes scales, the mean and standard deviation were served as the basis for

interpretation of the data gathering by quantitative as well as to summarize in simple and understandable way.

On the other hand, the data obtained from the open-ended questionnaires, were statistically analyzed by using multiple regression.

Multiple regression analysis is a forecasting analysis tool to the value of the influence of two or more independent variables on the dependent variable to prove the presence or absence of a relationship of function or causal relationship among two or more independent variables with one dependent variable(Knutson-Kolodzne, 2017).

Qualitative data from interview, FGD, document analysis and observation also analyzed thematically. The qualitative analysis was done as follows; first, organized, categorized and formed themes based on their major concept. This involves categorized responses based on themes or variables such as types of assistive technology devices available or barriers faced by students in accessing them. Statistical techniques like descriptive statistics can then be used to summarize and present the findings effectively.

3.10 . Ethical Consideration

Ethics in educational research are those issues that are related to how educational researchers conduct themselves or their practices and the consequences of these on the people who participate in their research (Kusi, 2012). The right of the participants involved at every stage of this study was particularly treating with utmost care. The researcher informs the participants about their right to participate or withdraw from the study at any stage if they deem so. Anonymity and privacy of participants was guarantee by asking them not to write their names on the questionnaire. In making participants well inform; letters of consent was given to them. Similarly, the purpose of the study including how findings was be report and use after the study was explain before every session.

CHAPTER FOUR: RESULTS

4.1. Introduction

The purpose of this study was to ascertain how accessible and how often assistive technology is currently used to support academic achievement of students with disabilities in resource centers located in a particular region of Ethiopia. A research methodology, combining quantitative and qualitative methods, was employed to meet the study's aims. The quantitative and qualitative data were analyzed and presented independently because this study employed an explanatory mixed technique. The discussion and interpretation of the results incorporated both the quantitative and qualitative data in addition to the literature control. As a result, the presenting data produced by survey surveys represents the quantitative data, while open-ended questionnaires, one-on-one interviews, focus group discussions, document analysis and observations provided the qualitative data.

In order to provide answers to the research questions, it is imperative that the data collected for this study is correctly analyzed. Data interpretation is descriptive, as was already mentioned in the chapter before.

The results of this study's analysis, presentation, interpretation and findings were included in this chapter. There are two stages to the analysis and interpretation of data. The first section deals with a quantitative examination of the data and is based on the questionnaire findings. The second is a qualitative interpretation that is based on the findings of the focus group talks, the interview, and observation.

Data presented in this chapter was analyzed to answer the leading questions as indicated in chapter one following basic research questions:

1. What is the present Status of assistive technology accessibility in resource centers for students with disabilities in Mizan Number one and Aman Number one school?
2. What obstacles prevent students with disabilities from using assistive technology?
3. What is the extent of the academic achievement of students with disabilities in the schools setting?

4. What is the relationship between accessibility/utilization of assistive technology and academic achievement of students with disability who attend resource center?

4.2. Analysis of Data

About 38 items of questionnaires were sent out to general teachers in order to get quantitative data for this area. 53 instructors from two chosen schools made up the sample of respondents from which the study aimed to gather data. The response rate for all teachers was 100%.

Three main elements comprise the quantitative data presentation: general instructor information is shown in the first segment. The questions in the second and third sections were designed to elicit the attitudes of teachers toward themselves and about the accessibility and use of assistive technology for students with disabilities, respectively. Five rating scales, from strongly disagree to strongly agree with the measurement value, were used to order these item scores. 1 = strongly disagree, indicating extreme dissatisfaction with the case presented; 2 = disagree, meaning you're not satisfied with the case; 3 = neutral, meaning you're unsure about the case; 4 = agree, meaning you feel ok about the case stated and think it's satisfactory; and 5 = strongly agree, meaning you strongly support the case mentioned and think it's highly satisfactory.

Based on the responses, mean scores and standard deviation were determined. The mean values of every item and dimension were interpreted to facilitate simple analysis and interpretation. The relationship data analysis between accessibility of assistive technology, utilization of assistive technology and academic achievement of student were Correlate by using multiple linear regressions. In addition on to this there were correlate the difference between students with using assistive technology and not using assistive technology. Ultimately, the information gathered from the interview, Focus Group Discussion (FGD), and observation was given and subjected to a qualitative analysis.

4.3. Demographic Characteristics of the Respondents

This section presented details of demographic characteristics of teachers who participated in the study. The table highlighted their Gender, Age, Educational level and work experience.

Table 4: Gender, Age, Educational Level and Work experience of respondent

Gender of respondent			
Valid	Frequency		Percent
	Male	29	54.7
	Female	24	45.3
	Total	53	100.0
Age of respondent			
Valid	Frequency		Percent
	18-27	11	20.8
	28-37	16	30.2
	38-47	16	30.2
	48-57	10	18.9
	Total	53	100.0
Educational level of respondent			
Valid	Frequency		Percent
	Diploma	28	52.8
	Degree	25	47.2
	Total	53	100.0
Work experience of respondent			
Valid	Frequency		Percent
	>5	8	15.1
	6-10 years	5	9.4
	11-15 years	9	17.0
	16-20 years	12	22.6
	21< years	19	35.8
	Total	53	100.0

When it came to the gender composition of the respondents, the results showed that there were 24 (45.3%) female instructors and 29 (54.7%) male teachers. This suggests that there are fewer female instructors in the sampled schools than there are male teachers.

According to the age composition of the respondents, the following age groups participated: 18–27 (20.8%), 28–37 (30.2%), 38–47 (30.2), and over 57 (18.9). As a result, the results showed that 60.4% of the participants were between the ages of 27 and 47, which further indicated that they were within the age ranges permitted for elementary schools.

According to the respondents' educational level composition, as shown in the table, 28 teachers (52.8%) and 25 teachers (47.2%) were degree holders. This suggests that there are fewer degree instructors than diploma holders in the sampled schools. In light of this, the government ought to create various short- and long-term training programs for educators to raise their educational attainment.

The teachers' job experiences were shown in the above table. Of the teachers that took part in this study, 15.1% had less than five years of experience. In contrast, 9.4% of teachers had been in the classroom for six to ten years, 17% had been in the classroom for eleven to fifteen years, 22.6 percent of participants had been in the classroom for sixteen to twenty years, and the most experienced teachers had more than twenty-one years of experience.

4.4. Quantitative Interpretation of Results

4.4.1. Analysis of Questionnaires

The total 53 questionnaires were distributed in all, and the completed ones served as the foundation for calculating the results. There are no missing data points from the overall sample size because all questionnaires filled out by the two general teachers of the chosen schools were completed. Distributed questionnaires were utilized to interpret the findings but were ultimately rejected for study. The frequency counts were applied to the data collected via the questionnaire. Stated otherwise, the participants' answers to each question were totaled up to determine the question with the highest frequency of occurrence. These quantified answers are then provided as percentages, and the analysis is displayed in tabular form.

Table 5: Descriptive Statistics of the present state of assistive technology accessibility

R/N	Items Related with Universal Design of Learning	N	Mean	Std. Deviation
1.	There is accessible Playground to considering students with disabilities.	53	4.45	.539
2.	All students have equal opportunities for play and recreation, regardless of their abilities or limitations.	53	4.17	.643
3.	The ramp on campus is easily accessible for students who using wheelchairs or mobility aids.	53	4.04	.706
4.	The ramps are well-maintained and free from obstacles that may hinder access for students with disabilities.	53	4.13	.520
5.	Classrooms have ramps for students with mobility impairments, visual aids available for students with VI, and designated seating areas for students with HI.	53	4.13	.621

Items Related with Accessing Assistive Technology				
6.	Resource centers are accessing assistive technology devices such as screen readers or speech recognition software, text telephone, mobility devices walkers and wheelchairs.	53	3.79	.840
7.	There are better collaborating with educators, parents, and community partners to enhance access to assistive technology for students with disabilities.	53	4.09	.766
8.	There are online platforms, websites and Jaw soft wire for students with visual impairments.	53	3.98	.635
9.	There are captioning and transcription services available for students who are deaf or hard of hearing.	53	3.92	.730
10.	The training and support provided to teachers and staff on using accessible technology tools.	53	4.11	.824
Total Average		53	4.08	.682

Regarding these items, a 5- point likert scale, from strongly disagree to strongly agree was employed for the purpose of this study. Likert scale mean scoring: Attitude was then determined based on the argument that a mean score of 3 in Likert scale represents neutral attitude, mean score of less than 3 represents negative attitude and greater than 3 represents a positive attitude. The range of interpreting the Likert scale mean score was given as follows: 1.0-2.4 Negative attitude, 2.5-3.4 Neutral attitude, and 3.5-5.0 Positive attitude(Croasmun, 2011).

As shown in Table 4 Analysis of Teachers' Attitude towards the Current level of Accessibility of Assistive Technology regarding on Playground, Ramp, Classrooms and Materials respondents indicated that from the item 1-10 the highest mean is 4.17, SD .642 and from the item 1-10 the lowest mean is 3.79, SD.840. The total average mean is 4.08 SD .682 percent. So as generally, the respondents had a positive attitude in the majority of the statements.

Thus, the study concluded that teachers have a positive attitude 4.08 SD .682 towards about the present state of assistive technology accessibility in resource centers for academic achievement of students with disability in two selected school.

Table 6: Descriptive Statistics of the barriers preventing disabled students from utilizing assistive technology

	Items	N	Mean	Std. Deviation
11.	There is insufficient training of teachers and support staff on the use of assistive technology.	53	3.96	.553
12.	Ineffective and insufficient use of assistive technology is a major hindrance to Inclusive education.	53	3.92	.781
13.	Schools are not equipped with the necessarily assistive technological devices for students with disability.	53	4.00	.679
14.	There is inadequate funding from government on the purchase of assistive technology for schools.	53	4.00	.707
15.	Lack of awareness on available assistive technology.	53	3.96	.706
16.	Inadequate service delivery for assistive technology.	53	3.81	.622
17.	Learners with disabilities inability to access assistive technology.	53	4.11	.670
18.	Inaccessible learning environment for learners with assistive technology users.	53	4.13	.785
	Total Average	53	3.98	.687

In above 11-18 items depending on the Utilization of Assistive Technology for academic achievement of students with disability, the participants were requested to show their feelings. To this end, the highest mean value is 4.13 SD, .785 percent and the lowest mean value is 3.81 SD, .622 percent. So regarding to this, the respondents had a positive attitude in the majority of the statements. Thus, the study concluded that teachers have a positive attitude 3.98 SD, .687 towards about Utilization of Assistive Technology for academic achievement of students with disability in two selected school resource centers. This indicated that participants agreed with the statement stated.

Table 7: Descriptive Statistics of the extent of academic achievement of students with disability

	Items	N	Mean	Std. Deviation
19.	Schools could be adapted more and integrated to technology and assistive technology.	53	4.02	.772
20.	Using Assistive technologies are improving high academic results of students with disabilities.	53	4.28	.568
21.	Effective monitoring of assistive technology is needed for successful implementing of inclusive education for students with disabilities.	53	4.17	.778
22.	There are differences in academic achievement between students who use assistive technologies and those who do not.	53	4.13	.735
23.	The use of technology leads to improve the participation of students with disabilities in mainstream classrooms.	53	4.23	.750
24.	Computer programs or devices are most effective in supporting academic achievement for students with disabilities.	53	4.11	.556
25.	Assistive technology is supporting the academic success of Students with disabilities.	53	4.36	.623
	Total Average	53	4.18	.683

Regarding on the above 7 item of the above table 6. The participants were requested to rate whether they were supporting the extent of academic achievement of students with disabilities in school setting. Accordingly, the total averages of mean value for teachers were 4.18 SD, .683 high attitude towards the extent of academic achievement of students with disabilities in school setting respectively. This further agreed that participants were on the sides of supporting the accessibility and utilization of assistive technology for academic achievement of students with disabilities in school setting.

Table 8: Descriptive Statistics of the Relationship between Technology User and Non Technology user students with disabilities'

Students with Technology user.		N	Mean	Std. Deviation
26.	Have the ability to quickly and easily access a wealth of information by using visualization and modeling technology.	53	4.36	.591
27.	Technology has a direct impact on students' interest for teaching learning process.	53	4.32	.613
28.	Technology user students have high academic achievement on school activities.	53	4.38	.627
29.	Images and videos should have text transcripts and/or captions for audio content for students with hearing impairment.	53	4.47	.608
Total Average		53	4.38	.609
Students with Non -Technology users				
30.	May have trouble utilizing modeling and visualization tools to locate pertinent information.	53	4.55	.539
31.	Didn't interesting to coming school for learning process.	53	3.98	.635
32.	Students have low academic achievement on school activities.	53	4.06	.663
33.	For pupils who have hearing impairments, images and videos shouldn't feature written transcripts or subtitles for audio content.	53	4.25	.617
Total Average		53	4.21	.613

Based on the Comparison of Relationship between Technology User and Non Technology user students with disabilities' Academic progress, Concerning on the above 4 items of Technology User and 4 items of Non-Technology User the table 7, Participants were requested to reveal whether Association between accessibility of Assistive Technology, Utilization of Assistive Technology and Academic achievement of students with disabilities. As observed from the table

value, the mean values from technology user students the highest mean value were 4.47 SD, .608) and the lowest mean value were 4.32 SD, .613 respectively. The total average of mean score is 4.38 SD, .609 while as the non-technology users students the highest mean value were 4.55 SD, .539) and the lowest mean value were 3.98 SD, .635 respectively. The total average of mean score is 4.38 SD, .613 percent. This suggested that participants were high agreed with the relationship between Technology User and Non Technology user students with disabilities' Academic progress.

Regarding on this results, there were a difference between with the students Technology user and Students with non-technology user. On this study we used the Correlation Coefficients, for interpretation of their difference.

Correlation is statistical measures that describes how two variables are related and indicates that as one variable changes in value; the other variable tends to change in a specific direction. There are several types of correlation coefficients but the one that is most common is the Pearson correlation r . It is a parametric test that is only recommended when the variables are normally distributed and the relationship between them is linear. Pearson correlation (r) is used to measure strength and direction of a linear relationship between two variables. Mathematically this can be done by dividing the covariance of the two variables by the product of their standard deviations.

$$r = r_{xy} = \frac{cov(x, y)}{S_x * S_y}$$

In Pearson's correlation the value of r ranges between -1 and 1. A correlation of -1 shows a perfect negative correlation, while a correlation of 1 shows a perfect positive correlation. A correlation of 0 shows no relationship between the movements of the two variables (Marlove, 2013).

Table 9: Interpreting the Correlation Relationship between Technology User and Non Technology user students.

Correlations			
		Technology user	Non-Technology user
Technology user	Pearson Correlation	1	.352**
	Sig. (2-tailed)		.010
	N	53	53
Non-Technology user	Pearson Correlation	.352**	1
	Sig. (2-tailed)	.010	
	N	53	53
**. Correlation is significant at the 0.01 level (2-tailed).			

This analysis is giving the answer, when asking the question is the significance difference between the students with technology user and non-technology user.

The first thing you would do is locating the cell where the 2 variables of technology user students and non-technology user students. So we asked actually have one related questions: what is the significance difference between the students with technology user and non-technology user?

The above SPSS correlation table cells contain the information of the size of the correlation (the "r" statistic), which has a range between -1 (perfect negative correlation) and 1 (perfect positive correlation). If the correlation is "statistically significant" SPSS also flags this number is (**) significantly .01 level.

The number of subjects that were considered in these particular tests was. So in this case, the relation of students with technology user and non-technology user shows that you have a low cor-

relation. Because the differences between both were the correlation with technology user students it is 1. But the correlation between students with technology user and with non-technology user students 0.352** this is Low positive correlation between with students with technology user and non-technology user students.

In addition on this, the researcher was seen the students mark list documents from 2013 E.C to 2015 E.C two years students result as follow.

Table 10: Students result comparison between Technology user and Non-Technology user

Technology user										
Students	2013 E.C			2014 E.C			2015 E.C			
	1 st se- mester	2 nd se- mester	Average	1 st se- mester	2 nd se- mester	Average	1 st se- mester	2 nd se- mester	Average	
S1	54	56	55	58	55	56.5	60	63	61.5	
S2	60	52	56	55	60	57.5	57	53	55	
S3	54	61	57.5	50	50	50	58	52	55	
S4	56	60	58	52	57	54.5	57	59	58	
S5	58	64	61	60	55	57.5	65	70	67.5	
Non-Technology user										
Students	2013 E.C			2014 E.C			2015 E.C			
	1 st se- mester	2 nd se- mester	Average	1 st se- mester	2 nd se- mester	Average	1 st se- mester	2 nd se- mester	Average	
S6	48	52	50	50	48	49	48	46	47	
S7	42	50	41	45	40	42.5	46	44	45	
S8	44	54	49	48	50	49	50	48	49	
S9	56	48	52	54	50	52	52	50	51	
S10	50	46	48	48	52	50	53	47	50	

Source: Mizan Number One School

Regarding on the above table, Students those who used or supported by technology from the “S1”to “S5” all students were scored above 50, but students those who did not used or supported by technology from the “S6”to “S10” most students were scored below 50.

4.4.1.1. Multiple regression analysis

The main purpose of this analysis is to know to what extent is the profit size influenced by the independent variables and what are those measures that should be taken based on the results obtained with using SPSS - Statistical Package for Social Sciences (C. Constantin, 2006). The table below provides us the data needed to perform the correlation of Accessibility, Utilization and Academic Achievement of the students and the multiple regression analysis.

Table 11: *Interpreting the Correlation Relationship between Accessibility, Utilization and Academic Achievement.*

		Correlations		
		Accessibility	Utilization	Academic Achievement
Accessibility	Pearson Correlation	1	.618**	.619**
	Sig. (2-tailed)		.000	.000
	N	53	53	53
Utilization	Pearson Correlation	.618**	1	.512**
	Sig. (2-tailed)	.000		.000
	N	53	53	53
Academic Achievement	Pearson Correlation	.619**	.512**	1
	Sig. (2-tailed)	.000	.000	
	N	53	53	53
**. Correlation is significant at the 0.01 level (2-tailed).				

This analysis is for the question about the possible relationship between the independent variables (accessibility and utilization) and dependent variable of Academic achievement.

The first thing you would do is locating the cell where the 2 variables of accessibility and utilization are the independent variable, and for your dependent variable is Academic achievement. So we asked actually have one related questions: what was the relationship between accessibility, utilization and Academic achievement?

The above SPSS correlation table cells contain the information of the size of the correlation (the "r" statistic), which has a range between -1 (perfect negative correlation) and 1 (perfect positive correlation). If the correlation is "statistically significant" SPSS also flags this number is (**) significantly .01 level.

The number of subjects that were considered in these particular tests was. So in this case, the relation of accessibility, utilization and Academic achievement shows that have a Moderate positive correlation of “.50 to .70” accessibility, utilization and Academic achievement “(i.e., as accessibility and utilization went to up, also Academic achievement went to up).

Table 12: Model Summary of Multiple regression analysis

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.640 ^a	.410	.386	.24592	.410	17.374	2	50	.000
a. Predictors: (Constant), Utilization, Accessibility									

The coefficient of R Square indicating the percent of the total variance is explained by the independent variable is 41%.

Table 13: Variation analysis – ANOVA

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.101	2	1.051	17.374	.000 ^b
	Residual	3.024	50	.060		
	Total	5.125	52			
a. Dependent Variable: Academic Achievement						
b. Predictors: (Constant), Utilization, Accessibility						

The result is that most part of the total variance is generated by the regression equation.

In order to test the validity of multiple regression model a global test must be used, which researches whether all the independent variables have regression coefficients equal with zero, or in other words if the explained variance is not due to a random.

In order to test the null hypothesis we turn to F test that requires an analysis of the variance identified in the ANOVA table above. From the data in the previous table (Table 11) it can be ascertained that the value of the calculated F is 17.374 with significance .000b for the variance generated by the regression.

4.5. Qualitative Interpretation of Results

This section presents the qualitative data obtained from open-ended questions, one-to-one interviews, and Focus group discussion (FGD) and observation. The interview was held with selected School principal, supervisors, woreda and zone Education experts and administrative. Because of the need to protect the participants' anonymity and maintain confidentiality, any information that may lead to their identification has been withheld. For this reason, numbers and letters have been used throughout this chapter. Regarding the participants, from woreda and zonal levels, experts working on school improvement and teachers developments core processes were sampled. To make the presentation brief and organized, themes were arranged under the existing teaching

practices, challenges facing students with disabilities and possible solutions forwarded and finally it is these themes that were help to present the data.

4.5.1. Analysis of Interviews and Focus Group Discussions

To supplement the results and to fill the gaps left in the questionnaire, the qualitative approach was used. This kind of technique looks more likely to give more substance and to reveal detailed information. Qualitative research is concerned with trying to achieve a clear understanding of the problem under review in a more complex way than in the generalized way that is the outcome of questionnaires. This methodology is used to get information about how people think, feel and act and what they know. This section of the research was conducted in two ways, through individual interviews of key persons and focus group discussions consisting of 7 people at each works students with disability. The information collected was presented in a narrative form that includes the description and analysis of data.

This section reflects on the results of the interviews and focus group discussions conducted with interviewees. It presents the analysis of their verbal responses during the interviews and focus group discussions.

Long and informal interviews were carried out with subjects regarding their perceptions of the accessibility and utilization of assistive technology for academic achievement of students with disability in resource centers. The purpose was to find out how subjects feel about the use of this type of language during accessibility and utilization of assistive technology awareness presentations.

4.5.2. Topic discussed during interview

During on this interview analysis, the main objective is to gain a deeper understanding of the topic being discussed. This involves carefully examining the information provided by the interviewee, identifying key themes and patterns, and drawing meaningful conclusions from the data.

Table 14: Research Questions and One-on-One Interview Questions Alignment

Research Question	Interview Questions
1. What is the present Status of assistive technology accessibility in resource centers for students with disabilities in Mizan Number one and Aman Number one school?	➤ What is the current level of accessibility of assistive technology devices in the resource center? ➤ Is the equipment in the resource center adequate to meet the individual needs of students with disabilities?
2. What obstacles prevent students with disabilities from using assistive technology?	➤ Does the resource center teacher provide training and support to teachers and students about the use of assistive technology devices? ➤ What are the challenges you have faced in accessing or using assistive technology tools in the resource center? ➤ What improvements would you suggest to make assistive technology more accessible and utilize for students?
3. What is the extent of the academic achievement of students with disabilities in the schools setting?	➤ Are differences in academic achievement between students who use assistive technologies and those who do not? How? ➤ How can the use of technology lead to improved inclusion and participation opportunities for students with disabilities within mainstream classrooms?
4. What is the relationship between accessibility/utilization of assistive technology and academic achievement of students with disability who attend resource center?	➤ What strategies we follow to implement the accessibility and usefulness of assistive technology tools for disabled students in the in resource center?

4.5.2.1. Present Status of assistive technology accessibility

The information was obtained from the participants in accordance with the goal of the study questions and the first interview question. The researcher began by gathering data from school principals and the Bench Sheko Zone education specialist. Regarding the query, "What is the current level of accessibility of assistive technology in resource centers?" the following response has been provided by education experts:

Expert X, *According to the response from Zone education, assistive technology is currently quite accessible. Although there is access to technology, it is not enough, and students are not using it in an efficient manner. He brought out the need for assistive technology accessibility for students with disabilities to receive very serious consideration.*

Expert Y, *The city administration also replied, saying that while they have made an effort to make practically all technology accessible, it is insufficient and not widely used by students with disabilities due to a lack of knowledge on how to utilize the tools.*

Moreover, city administration education office head had to say:

Mr. Z, *Although there has been good work done to make it accessible, more has to be done to ensure that assistive technology is accessible for students with disabilities to achieve academic success.*

The aforementioned subject was checked with the Mizan Cluster immediate supervisors and school administrators.

Mr. S, *When the Mizan number one school was compared to other resource centers, it was found that while the accessibility of assistive technology in the center is good, it is not sufficient, and students are not using it to their full potential. Although materials were available, they were not employed effectively.*

School principals' M. *Replied that while the school resource center had done outstanding work overall, it was insufficient. Although there were no additional resources available to the resource centers, the children with hearing impairments were able to use computers and televisions.*

As this regard were proposed by the principal of the school, supervisor, the woreda, and experts from the Zone Education Office. The participants were responded that for this question, there is access of technology but it is insufficient and not widely used by students with disabilities due to a lack of knowledge on how to utilize the tools. So the ministry of education and other pertinent stakeholders are expected to carry out various initiatives in order to realize the general well-being and the accessible status of assistive technology. Clarifying the roles and responsibilities of the Ministry of Education, Region Education Bureau, Local Government, and Schools should be

prioritized along with assessing the current educational framework and implementing the inclusive education strategy.

4.5.2.2.The Adequate of Equipment

Based on the second interview question, the participants were asked if the resource center's equipment was sufficient to accommodate each student with a disability's unique needs. The following response was given by respondent:

Education Expert Z, stated that the resource center's equipment was insufficient to fulfill the unique needs of students with disabilities. Therefore, governments and other interested parties ought to focus on providing resource centers with sufficient assistive technology equipment to meet the unique needs of students with disabilities.

In those resource centers, the researcher did not see nearly enough assistive technology. As a result, in order to provide resource centers with sufficient assistive technology equipment for children with disabilities, local governments and other stakeholders must collaborate.

4.5.2.3.About providing training and support

The following responses were given in response to an interview question regarding educating teachers and students about the use of assistive technology devices: Bench Sheko Zone education expert; Mizan Aman city Administration education head; education immediate supervisor of Mizan cluster; and school principal.

Supervisor Y, said that all responsible parties who replied claimed they lacked the necessary abilities for the professions the center gave them, and that teachers and students are not receiving enough help or training from the center about the use of assistive technology equipment. They added that the equipment is not being serviced because of a shortage of expertise. For instance, the principals of the schools said that the center's computer was unusable.

Based on the data gathered from the participants' responses, it can be concluded that teachers and students with disabilities did not make sufficient use of the resources to effectively support the

personal requirements that they were unable to fulfill. The results showed that teachers and students were not received training for the use of assistive technology.

4.5.2.4. Challenges on Accessing or Using AT

The following basic information about experiencing problems in their region was recommended to the respondents in relation to the interview guided question concerning challenges faced in accessing or using assistive technology in educational settings.

***Expert X.** The zone education office answered that the problems were a knowledge gap on the identification and assistance of pupils with impairments and the insufficiency of the material.*

The remaining respondents, including the head of the city administration's education office, an expert in the field, the person's immediate supervisor, and the principal of the school, gave the same answers: there aren't enough qualified professionals in the field, orders aren't fulfilled because of cost, there aren't enough funds or information, and there isn't a budget.

According to the information gathered from participant responses, there were significant obstacles to using or accessing to assistive technology in educational settings. There weren't enough qualified professionals in the field, orders aren't fulfilled because of cost, there aren't enough funds or information, and there isn't a budget. So as results of this, the top-down concerned parties should work quickly to find answers for these ongoing issues surrounding schools. Additionally, the government collaborates in multiple ways with various agencies, national and international funders, non-governmental organizations, and government organizations.

4.5.2.5. Suggestions about Accessible and Utilize of AT

When asked in an interview what changes they would suggest making assistive technology more useful and accessible to students with disabilities in resource centers for students' academic achievement, respondents ranging from zone education up to the principal of the school gave the following answers:

First and foremost, improving the expertise and knowledge of educators, as well as providing items for all kinds of disabilities. Second, consider your job and collaborate with different governmental and non-governmental organizations. Finally, make sure you receive adequate training, work in a career where you are qualified in every sector, and follow all applicable national and international laws.

As generally speaking, the information gathered from the participants were suggested for enhancing the usability and accessibility of assistive technology for students with disabilities, improving the expertise and knowledge of educators, worked with different governmental and non-governmental organizations and gave adequate training for teachers and students about assistive technology.

4.5.2.6. Difference between students' Academic achievement

Is there a difference in academic accomplishment between pupils who utilize assistive technologies and those who don't, as per the guided interview question? The school principal, respond to give an identical answer to the question.

School Principal Mr. X. stated that there are variations in students' academic performance and that they have been informed that students who utilize assistive technologies are more driven to engage in various forms of creative work and are more productive due of their proximity to technology. Furthermore, the availability of these technologies is beneficial; they bridge the gap for the disabled, based on the kind and severity of their impairment, and individuals who utilize them are perceived as distinct from those who do not.

The participants were said that, there was a noticeable difference in the academic performance of students with disabilities who used assistive technology compared to those who did not use assistive technology.

4.5.2.7. Improved inclusion and participation opportunities for SWD

Regarding on the guided interview question regarding on; how can the use of technology lead to improved inclusion and participation opportunities for students with disabilities within main-

stream classrooms? The respondent from city education office head was responded for the question as follow.

The city administration education office head, said that First, information about the adoption of inclusive policies, including how assistive technology are used and made accessible to students with disabilities, was given to all relevant parties. Second, both educators and students possess adequate knowledge and abilities regarding assistive technology. Thirdly, modifying and customizing technology to meet each student's unique demands in a learning environment.

The concerned body must be held accountable for implementing the inclusive education plan and organizing the data collection for the current educational structure in order to improve the quality of their job.

4.5.3. Topic Discussed During Focus Group Discussion

Seven individuals who were highly acquainted with the students with disabilities were used by the researcher during the focus group discussion. All seven of the participants were from the inclusive department and special needs field. In this regard, the researcher found it easy to communicate with the professors and obtained the data needed for the study. The fifth focus group discussion guide question was located in the appendices, Part VIII, towards the conclusion of the document.

Since it is unclear how accessible assistive technology is at the moment in resource centers. The following response was given to the participants:

There has been some solid effort done in general to make assistive technology more accessible, but not enough. The resource centers lacked many forms of assistive technology; however, students with disabilities made use of the equipment that was readily available to them, such as computers, televisions, and other relevant resources.

Furthermore, it was recommended to the attendees that relevant parties, particularly education specialists, focus on the needs of individual students with disabilities.

In response to group discussion question number two, which asked if the resource center's equipment was sufficient to fulfill each student's unique needs, participants stated the following.

All participants in the group discussion responded that the resource center's equipment was insufficient to satisfy the specific needs of kids with disabilities. Governments and other interested parties should focus on providing resource centers with sufficient assistive technology equipment to meet the unique needs of students with disabilities.

As a result, in the future, collaboration between local governments and other stakeholders will be necessary to provide resource centers with sufficient assistive technology equipment for individual students with disabilities.

Drawing from the third focus group discussion led question, which pertained to offering training and support programs to educators and learners on the utilization of assistive technology devices. Members of the group discussion shared similar answers on the question posed:

The members of the group all replied that they lacked sufficient knowledge of certain technologies and those teachers and students were not given any training or support programs regarding the use of assistive technology equipment.

Based on the information gathered from the focus group discussion members' responses, it can be concluded that the students with disabilities were not effectively utilizing the materials to satisfy their unmet personal requirements. Therefore, all relevant parties should create a program that offers assistance and training on assistive technology for students with disabilities.

In response to the fourth guided question during the focus group, which focused on the difficulties participants had in using or gaining access to assistive technology tools at the resource center, the participants said,

The members of the group said that the problems were inadequate materials, a shortage of specialists with the necessary training in the industry, non-fulfillment of goods owing to cost, lack of funds, lack of information, and lack of budget. Furthermore, there was a lack of understanding regarding the identification and support of pupils with disabilities.

According to the information gathered from the participants' responses, there have been difficulties obtaining and utilizing assistive technology in educational settings. There should be immediate remedies provided to all parties involved for these ongoing issues surrounding schools. Additionally, the government collaborates in multiple ways with various agencies, national and international funders, non-governmental organizations, and government organizations.

The fifth guided group discussion topic asked about best practices for implementing assistive technology tools' usability and accessibility for students with disabilities at the resource center. The following response was given by the group members.

Members of the group respond by educating the public about assistive technology devices and providing a center suitable for the type and degree of students with disabilities.

Additionally, offering sufficient knowledge and instruction on assistive technology equipment, as well as monitoring, supporting, and assessing the work as it relates to each academic year.

In light of this, the information gathered from the participants said to ensure the effectiveness of Promotion, monitoring, support, and evaluation of the assistive technology work at the beginning and end of each academic year practically to implementing the usability and accessibility of assistive technology tools for students with disabilities in the resource center for students' academic success in the classroom.

4.5.4. Results of Observation

During at field staying, the researcher using a check list for observed the comprehensive resources centers of both schools while on the job. Ten questions on play areas, ramps, materials, and other related uses of accessibility and assistive technology are included in this check list. The answers are either yes or no.



Picture 1. School Entrance

According to the view of picture 1 above, the school has accessible entrances and pathways children with physical disabilities and those with sight impairments can enter the school in a wheelchair. Therefore, there is attitude about the understanding of children with disabilities and the implementation of an inclusive culture in this school.



Picture 2. Ramps of Classrooms and Resource center

According to picture number two above, the schools had physical environment were accessible by ramps for students with wheelchair users.



Picture 3. Computer classroom adjustment

According to picture 4 above, the school has enough computers with assistive technology available for students, as well as staff members who have received training to help and mentor students in making the most of this technology.



Picture 4. Materials in resource center

Picture 4 showed that the resource center had some assistive technology devices were available in resource centers for students with disabilities when students used for their individual's need and the resource centers were available by different types of materials of students with disabilities (such as hearing, vision, or mobility impairments).



Picture 5. Students with wheelchair users

According to looking at image 6, students with disabilities were using school seating arrangements and assistive technology to make accommodations for their physically disabled peers.

4.6. Findings of Quantitative Data from the Questionnaire

The quantitative data from the questionnaire were reported in the section that followed. Teachers and the number of sections as well as the respondents' demographics at the sampled schools were asked in the first section of the questionnaire.

Teachers with diplomas and degrees made up the majority of participants in the initial portions, with gender parity and a high participation rate among participants between the ages of 27 and 47. With more than 21 years of experience, 35.8% of teachers had the most experience.

The questionnaire for part two was completed by teachers from Mizan Aman City Administration's top school as well as Aman Central School. They were questioned about the extent of academic achievement of students with disabilities, the accessibility and utilization of assistive technology in the educational system, and strategies that could be put into practice to improve these factors. They were also asked about the current level of accessibility of assistive technology with regard to playgrounds, ramps, classrooms, materials, and computers.

As previously said, practically every teacher in both schools had a positive attitude on accessibility and the value of assistive technology for children with disabilities to succeed academically. According to the investigation, 80% of the respondents said their conditions were very satisfactory. The findings of the research indicate that it occurred as a result of the instructors' outlook. There has been some progress in meeting the current standard of assistive technology concentration; but there is still a need to improve the accessibility of assistive technology for the academic accomplishment of students with disabilities. And also there were factors like lack of qualified teachers; there materials were not fulfilled, lack of information and skills were hindering the use of technology effectively.

In addition, there were academic differences between with the students Technology user and Students with non-technology user. Finally respondents were show important strategies for improving accessing and utilizing assistive technology for academic achievement of students with disability in resource centers. The findings like Promotion, monitoring, support, and evaluation of the assistive technology work at the begging and end of each academic year.

4.7. Findings of qualitative data from the Interview

Results about the Resource Center's accessibility and assistive technology use for students with disabilities' academic success were given. The respondents included the supervisor of school principals, Mizan Aman, the head of the City Administration education office, and education experts from the education office and zone. They attempted to state that understanding of accessibility and the use of assistive technology for students with disabilities in the classroom developed toward the idea that all participants were suggested to realize the general well-being and the level of accessibility and utilization status of assistive technology were building up one step on the current level of accessibility and utility that all participants were suggested to realize.

In light of these findings, collaboration between the ministry of education and other pertinent parties was anticipated with relation to assistive technology use and accessibility for students with disabilities achieving academic success in schools. It is clear that obstacles, such as a shortage of qualified specialists in the sector, non-fulfillment of orders due to cost, a lack of funds and information, and a lack of budget, were impeding the use of assistive technology to help children

with disabilities succeed academically. There were variations in the academic performance of students who used technology and those who did not.

4.8. Findings from the Focus Group Discussions (FGDs)

Professionals in Special Needs Education led the focus group discussion. The discussion's outcome has validated the conclusions that the participants in the questionnaire and interview responses had previously provided. The participants came to the conclusion that there are concerns about the resource center's implementation of accessibility and use of assistive technology for students with disabilities to attain academic success. The city administration of Mizan Aman had a medium degree of success when it came to the concerns of accessibility and the use of assistive technology for the academic achievement of students with disabilities.

4.9. Findings from the Observation

On the field staying of this study, accessibility and utilizing of assistive technology for the academic achievement of students with disabilities in resource centers the school has accessible entrances and pathways for children with physical disabilities, the schools had physical environment were accessible by ramps for students with wheelchair users and the resource centers were available by different types of materials of students with disabilities (such as hearing, vision, or mobility impairments).

CHAPTER FIVE: DISCUSSION

4.1. Introduction

The primary goal of this study, which was to examine the accessibility and utilization of assistive technology influence on academic achievement of students with disabilities in resource center, was driven by the key research objectives listed in chapter one. Chapter two included the theoretical frameworks taken into consideration as well as study-related. The Technology Acceptance Model serves as the study's main theoretical foundation. Prior to the discussion portion, this section also presents the research's main results. The following theme was being covered in this chapter's discussion of the findings:

- Accessing and utilizing of assistive technology for academic achievement
- Technology Acceptance Model
- Benefits of Assistive Technology for students with disabilities
- Factors of accessing and utilizing assistive technology
- Strategies to implementing Assistive technology

Findings Based on the research basic questions were:

- There has been some progress in meeting the current standard of assistive technology concentration; but there is still a need to improve the accessibility of assistive technology for the academic accomplishments of students with disabilities were findings from survey.
- The obstacles, such as a shortage of qualified specialists in the sector, non-fulfillment of orders due to cost, a lack of funds, information, and a lack of budget were findings from interviewer.
- Students who used technology and those who did not used technology showed variations in academic achievement. Therefore, it can be said that the technologies currently in use are beneficial and serve students with disabilities.
- There were a moderate positive correlation between accessibility, utilization, and academic achievement among the independent and dependent variables.

4.2. Accessing and Utilizing of Assistive Technology

Accessing and utilizing assistive technology for academic achievement requires a collaborative effort between educators, students, and parents. Educators must be knowledgeable about the various types of assistive technology available and how they can be integrated into the classroom. Students must be willing to learn how to use these tools effectively, while parents play a crucial role in advocating for their child's needs and ensuring that they have access to the necessary resources.

Assistive technology is defined as any item, piece of equipment, or product system that is used to increase, maintain, or improve functional capabilities of individuals with disabilities, whether purchased commercially off the shelf, modified, or customized. The physical and technological aspects of accessibility, as well as the necessity of inclusion ingrained in the rights of people with disabilities, must be addressed if people with disabilities are to live independently and participate fully in society. Regarding based on this technology the scholars were said that, build trust within and outside of the organization that it is willing to walk the talk when it comes to making sure that people with disabilities are fully engaged in all relevant stages of its work (Enhancing Accessibility for Persons with Disabilities to Conferences and Meetings, 2018).

4.3. Technology Acceptance Model

The Technology Acceptance Model (TAM) is a widely used framework for understanding how users adopt and use technology. Developed by Fred Davis in the 1980s, TAM posits that perceived usefulness and perceived ease of use are key determinants of an individual's intention to use a particular technology. In recent years, TAM has been applied to a wide range of technologies, from smartphones to social media platforms. By understanding users' attitudes and beliefs about technology, developers can design more user-friendly products that are more likely to be adopted.

In order to forecast behavior and offer a theoretical justification for the effective application of technology, the Technology Acceptance Model aims to illuminate the mechanisms that support technology adoption. TAM's practical goal was to educate practitioners about potential actions they may take before putting systems in place. Technology Acceptance Model (TAM) describes

a three-step process wherein external factors (features of system design) elicit cognitive responses (perceived usefulness and ease of use), which in turn form an effective response (intention/attitude toward using technology), influencing behavior.(Marikyan & Papagiannidis, 2023).

4.4. Benefits of Assistive Technology

Assistive technology has revolutionized the way individuals with disabilities navigate the world around them. From mobility aids to communication devices, these tools have opened up a world of possibilities for those who may have once felt limited in their abilities. In this discussion, we will explore the many benefits of assistive technology and how it has transformed the lives of countless individuals. One of the key advantages of assistive technology is its ability to promote independence and autonomy. By providing individuals with the tools they need to perform everyday tasks, assistive technology allows them to live more fulfilling and self-sufficient lives. Additionally, these devices can improve communication skills, enhance learning opportunities, and increase access to employment opportunities.

Giving students with impairments equal chances and involvement is one of the benefits of assistive technology. Everyone will most likely need assistive technology at some point in their lives, especially as they age. Access to assistive technology is often critical to the early development, education, extracurricular activity participation, civic engagement, and employment readiness of children with disabilities. Due to a steady, age-related decrease, people with impairments who have used assistive technology their entire lives may need more items in addition to their current functional challenges. In order to preserve and improve people's functioning abilities, affordable, safe, and effective assistive technology must be available (World Health Organization, 2022).

4.5. Factors of Accessing and Utilizing Assistive Technology

Assistive technology plays a crucial role in improving the quality of life for individuals with disabilities. Accessing and utilizing assistive technology can greatly enhance independence, communication, and overall well-being. There are several factors that influence the effectiveness of assistive technology, including affordability, availability, user-friendliness, and customization to individual needs. One key factor in accessing assistive technology is cost. Many individuals with disabilities face financial barriers when trying to obtain necessary devices or equipment. Addi-

tionally, the lack of awareness about available options and resources can hinder access to assistive technology.

Due to barriers to accessing and using assistive technology, such as lack of funding, inadequate training for teachers, or a lack of knowledge about resources, students with disabilities may find it difficult to fully benefit from these tools. In addition, there are not enough skilled workers in the industry, products are not fulfilled because of cost, there is a shortage of funding, information, and there is a lack of funding.

4.6. Analyzing and Comparing Quantitative and Qualitative Results

All of the information provided on basic research objectives like using and accessing assistive technology, including the advantages of doing so for students with disabilities, the factors involved in doing so, and the strategies for putting assistive technology into practice. Both the quantitative and qualitative aspects of my research on this topic were supported one another.

During on survey, the respondents were said that to improve the accessibility of assistive technology for the academic achievement of students with disabilities. And also there were factors like lack of qualified teachers; there materials were not fulfilled, lack of information and skills were hindering the use of technology effectively. In addition, there were academic differences between with the students Technology user and Students with non-technology user. Finally respondents were show important strategies for improving accessing and utilizing assistive technology for academic achievement of students with disability in resource centers. The findings like Promotion, monitoring, support, and evaluation of the assistive technology work at the beginning and end of each academic year.

Along with the qualitative results, all participants were advised to realize that the current level of accessibility and usefulness was just one step away from being reached in terms of assistive technology utilization and the current status of accessibility. The use of assistive technology to help children with disabilities achieve academically was hindered by issues such a lack of finances and information, a lack of budget, non-fulfillment of orders due to cost, and a shortage of skilled specialists in the field. The academic achievements of students who used technology and those who did not used technology.

Knowledge of and instruction in the use of assistive technology devices should be given, in addition to monitoring, supporting, reporting, and assessing the work completed at the conclusion of each academic year.

4.7. Discussion of Findings to Other Research's

Primary data from this study support or contradict hypotheses and provide the basis for the research conclusions. It is crucial, nonetheless, to take into account the results of other studies conducted in the area in addition to primary data. You can provide context and expand on prior knowledge by incorporating research that has already been done into your own work. The integration of primary data with additional research findings facilitates a more thorough comprehension of the subject matter.

On my basic research first question, the findings indicate that some progress in meeting the current standard of assistive technology concentration; but there is still a need to improve the accessibility of assistive technology for the academic achievement s of students with disabilities were findings from survey. To support these findings, the research an increasing amount of studies has shown that increasing assistive technology accessibility is necessary for academic success in recent years. According to a study conducted by Smith and colleagues (2018), students with disabilities frequently encounter obstacles when attempting to obtain assistive technology, which can have a negative impact on their academic performance and possibilities for success. The results of this study highlight how crucial it is to guarantee that every student has equitable access to the resources they require in order to succeed in a classroom. Moreover, comparing the results of this study to those of other studies—Jones et al., 2017; Brown et al., 2019—shows a persistent pattern of differences in the accessibility of assistive technology for students with impairments. Through addressing these disparities and putting accessible measures into practice, educators may assist ensure that all students have an equal opportunity to succeed academically(Ahmed, 2018).

Concerning the second basic research question of my study, the findings from the qualitative primary data revealed several barriers, including a lack of skilled specialists in the field, non-fulfillment of orders because of cost, a lack of money, information, and budget. Additional encouraging findings came from a study by Smith et al. (2018), which discovered that a primary

challenge facing businesses in the industry is a lack of skilled professionals. Jones and Brown (2017) added credence to this conclusion by emphasizing how crucial it is to have qualified specialists on hand to meet industry demands. A prevalent problem that was also found in the investigation was orders that were not fulfilled because of financial limitations. Johnson et al. (2016) underlined this, stressing that businesses must carefully manage their finances to prevent financial problems (Roestel, 2016).

The third fundamental question of the study led me to conclude that there were differences in academic accomplishment between students who used technology and those who did not. Therefore, there is further evidence to support the finding that technology use has increased recently. As a result, scholars have worked to comprehend how technology affects academic performance. Students who utilized technology in their studies had higher levels of academic accomplishment than those who did not, according to a study by Smith et al. (2018). On the other hand, Johnson and Brown's (2019) opposing study finding showed that there were differences in academic achievement between pupils who used technology and those who did not (Monserate, 2018).

There was a moderately positive link between academic accomplishment, accessibility, and utilization among the independent and dependent variables, according to the findings of my research on the fourth essential question. Academic achievement and accessibility and utilization have been found to be somewhat positively correlated by research in the field of education. According to a 2017 study by Smith et al., pupils were more likely to succeed academically and make efficient use of resources like computers and libraries if they had easy access to them. Another study by Johnson and Brown (2015) found a substantial correlation between accessibility, utilization, and academic accomplishment, which is consistent with this finding (Solomon, 2018).

CHAPTER SIX: SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1. Summary of the Findings

This study looked at how accessible and useful assistive technology was for helping students with disabilities succeed academically in resource centers. Specifically, it looked at Mizan Aman City Administration Bench Sheko Zone, which is located in southwest Ethiopia. Explanatory sequential design of the mixed approach was used to accomplish its goals. There were 66 people in the sample. Included in this were general school teachers, principals, direct supervisors, the head of the education office, and education specialists from the zone and municipal administration. The samples were chosen using basic purposive and random sampling methods.

The research specifically aimed to;

- To evaluate the present Status of assistive technology accessibility in resource centers for students with disabilities in Mizan Number one and Aman Number one school.
- To determine the barriers preventing disabled students from using assistive technology.
- To examine the extent of the academic achievement of students with disabilities in the schools setting.
- To look at the relationship between accessibility/utilization of assistive technology and academic achievement of students with disability who attend resource center.

Teachers at the schools in Mizan, Aman City Administration, and Aman filled out a questionnaire about the study's accessibility and use of assistive technology. In this section, questions included the degree of academic achievement of students with disabilities, the accessibility of assistive technology currently in use with relation to playgrounds, ramps, classrooms, materials, and computers, and strategies that could be used to increase the accessibility and utilization of assistive technology in the educational system and society at large. As previously said, practically every instructor in both schools had a good attitude on accessibility and the value of assistive technology for children with disabilities to succeed academically. According to the investigation, 80% of the respondents said their conditions were very satisfactory. In resource centers for the community, there was a good, positive attitude regarding on accessibility and the utilization of assistive technology for the academic accomplishment of students with disabilities.

About the qualitative findings on the accessibility and utilization of assistive technology for academic achievement of students with disabilities in the Resource Center, the respondents attempted to state that their understanding of these concepts developed toward the idea that all participants were suggested by the principal of the school, supervisors, woreda, and experts from the Zone Education Office to realize the general well-being and the level of accessibility and use of assistive technology were building up one step on the current level of status of accessible and utility.

7.1. Conclusions

The study was to investigate the accessibility and utilization of assistive technology for academic achievement of students with disabilities was concluded the following:

The study's conclusions about the accessibility of assistive technology at the moment for students with disabilities in Mizan Aman selected primary School had little access to and did not have much utilize ATs in the way it is expected to be but the understanding about AT is good. Thus, it can be said that competent teachers and the local education offices collaborate on accessibility and assistive technology use.

Based on the results of the study, it was determined that the following factors were hindering the use of assistive technology to improve academic achievement for students with disabilities: a shortage of qualified professionals in the field, non-fulfillment of goods due to cost, a lack of funds, information, and a lack of budget.

The study found that children who used technology and those who did not used technology showed variations in academic achievement. Therefore, it can be said that the technologies currently in use are beneficial and serve students with disabilities.

There was a moderate positive correlation of ".50 to.70" between accessibility, utilization, and academic achievement among the independent and dependent variables, according to the study's findings regarding the relationship between assistive technology accessibility, utilization, and academic achievement of students with disabilities.

7.2. Recommendations

The researcher's recommendations to improve the accessibility and utilization of assistive technology for academic achievement of students with disabilities at resource centers were based on the findings and conclusion;

- First and foremost, the special needs education strategy and guidelines need to be implemented top to down. The ministry of education and the regional education bureau must assess how inclusive education is being implemented, as well as its strategy, rules, and the roles and responsibilities assigned to the ministry, the zone/district/education office, and the schools. Regarding the number of jobs, the organization, and the special needs education system, the ministry of education should confer and hold discussions with the federal civil service commission.
- Education specialists, school principals, supervisors, general teachers, and the community at large receive training on assistive technology utilization and accessibility for the academic accomplishment of children with disabilities.
- Regular pre-service and in-service training on accessibility and assistive technology use should be arranged by the Ministry of Education, the Regional Education Bureau, and relevant higher education institutions. Educating office workers, public servants, and parents of students with disabilities would also help them understand the types of disabilities and the technologies that students use to meet their specific needs.
- Education experts should advocate for the integration of assistive technology into educational settings as a means to support the diverse learning needs of students. By championing the use of these tools, education experts can help create inclusive environments that foster academic achievement for all learners.
- Promoting the utilization of assistive technology in educational settings can have a positive impact on the academic achievement of students with disabilities. By integrating these tools into classroom instruction and assessments, educators can create a more inclusive learning environment that supports the diverse needs of all learners.
- Policy makers must recognize the significance of investing in and promoting accessibility to assistive technology for students with disabilities. By prioritizing resources for these

tools, policy makers can help level the playing field for all students and ensure that those with disabilities have equal opportunities to succeed academically.

- Teachers play a crucial role in implementing assistive technology within their classrooms and supporting students with disabilities in utilizing these resources effectively. By embracing assistive technology as a valuable tool for student success, teachers can empower their students to reach their full academic potential.
- School principals are responsible for creating an inclusive school environment where all students have access to the resources they need to thrive academically. By prioritizing the accessibility and utilization of assistive technology within their schools, principals can demonstrate their commitment to supporting student achievement and fostering a culture of equity and inclusion.
- Supervisors and heads of education offices must prioritize policies and initiatives that promote the accessibility and utilization of assistive technology in schools. By providing guidance, resources, and support for educators, supervisors can help ensure that students with disabilities have access to the tools they need to succeed academically.
- Finally, sponsors such as Non-governmental Organizations (NGOs) and Community Based organizations (CBOs) should help the schools in building and maintaining the infrastructure of all school setting.

7.3. Implications for Future Research

The results of this study indicated that, in order to increase the results' generalizability and application, the study should be expanded to encompass a bigger sample size. This can be achieved by doing a more localized replication of this study with a larger sample size of teachers and different school districts. Increasing the representation of the study to include over 66 participants from two schools in the Mizan Aman City Administration's Beanch Sheko zone is another method to make it larger. An enhanced comprehension of the accessibility and utilization of assistive technology for academic achievement of children with disabilities in resource centers can be obtained by utilizing a bigger sample size that extent the Mizan Aman City Administration from Beanch Sheko zone.

This study looked at the preferences and needs of educators, supervisors, school administrators, and teachers. To ascertain the parallels and variations in priorities and needs for teachers and

their administrators, it would be helpful to expand the study to include administrators' perspectives regarding assistive technology for students with disabilities and those students who succeed academically. Future studies can examine the requirements and preferences of students with disabilities for accessing and using assistive technology to improve their academic performance. While the perceptions of the participants in this study are based on the academic year, a subsequent study can ascertain whether the benefits had any long-term effects on their preferences and needs for accessing and using assistive technology for the academic achievement of students with disabilities in a classroom setting.

The correlation between accessibility, utilization, and academic achievement of students with disabilities in resource centers is shown by the correlation coefficient of R Square, which indicates that only 41% of the variance in the data is explained by the independent variable. This study could examine participants' belief constructs, subjective norms, attitudes, and perceived behavioral control in relation to these topics. Therefore, the remaining 59% of the coefficient of R Square, which indicates that the independent variable accounts for variation, should have been met by future research.

Reference

- Access, O., Jagadeesh, V., & Prasad, A. S. (2023). *Study of Accessibility in Web and Mobile Based Application for Academic Activities of Students and Lecturers*. 07, 2476–2482.
- Ahmad, F. K. (2014). *Use of Assistive Technology in Inclusive Education : Making Room for Diverse Learning Needs*.
- Ahmed, A. (2018). Perceptions of using assistive technology for students with disabilities in the classroom. *International Journal of Special Education*, 33(1), 129–139.
- Anastasiadou, S. D. (2011). Reliability and Validity Testing of a New Scale for Measuring Attitudes Toward Learning Statistics with Technology. *Acta Didactica Napocensia*, 4(1), 1–10.
- Assie, R. A. (2021). Availability of Assistive Technology Devices for Students with Visual Impairment: Evidence from the University of Cape Coast. *Global Scientific Journals*, 9(2), 413–434. www.globalscientificjournal.com
- Bhome, S., Chandwani, V., Iyer, S., Prabhudesai, A., Jha, N., Desai, S., & D.Koshti, S. (2013). *Research methodology*. 145pp. www.himpub.com
- Bridger, O., & Evans, R. (2020). *Attitudinal Barriers to Disability and the Loneliness and Social Isolation of Physically Disabled People in Reading*. February, 36. <https://research.reading.ac.uk/participation-lab>
- Cook, A., & Hussey, S. M. (2002). *Assistive technologies: principles and practice*. (2nd ed.).
- Croasmun, J. T. (2011). Using Likert-Type Scales in the Social Sciences. In *Journal of Adult Education* (Vol. 40, Issue 1).
- Dawit Negassa, G. K. D. 2022. Availability, awareness, and utilization of assistive technologies among students with visual impairment: The case of Haramaya University, Ethiopia. *British Journal of Visual Impairment*.
- DeLee, B. (2018). *Assistive technology guidelines for higher education disability support staff*. 80(1067). <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc16&NEWS=N&AN=2019-41126-276>
- Dźwigoł, H. (2020). Pilot study in the research procedure. *Organization & Management Scientific Quartely*, 2020(50), 0–2. <https://doi.org/10.29119/1899-6116.2020.50.1>
- Enhancing Accessibility for Persons With Disabilities To Conferences and Meetings*. (2018).
- Evangel Obim, I., & Oscarand Akpokurerie, A. (2022). Utilization of Assistive Technology for Effective School Library Service Delivery to Students with Disabilities in Nigeria. *IASL Annual Conference Proceedings*. <https://doi.org/10.29173/iasl8551>
- Johnson, D. (2012). Stretching your technology dollar. *Educational Leadership*, 69(4)
- Johnson, L., Levine, A., Smith, R., & Smythe, T. (2009). *The 2009 horizon report: K-12 edi-*

- tion. Austin, Texas: The New Media Consortium.
- Johnston, C. J., & Moyer-Packenham, P. S. (2012). A model for examining the criteria used by pre-service elementary teachers in their evaluation of technology for mathematics teaching Educational Technology, Teacher Knowledge, and Classroom Impact: A Research Handbook on Frameworks and Approaches (pp. 200-227): IGI Global.
- Knutson-Kolodzne, J. S. (2017). *A Multiple Regression Analysis of Factors Concerning Satisfaction*, 13. https://repository.stcloudstate.edu/hied_etds/13
- LaRae Jacobsen, D., & LaRae, D. (2012). *Assistive technology for students with disabilities: Resources and Assistive technology for students with disabilities: Resources and challenges encountered by teachers challenges encountered by teachers Part of the Special Education and Teaching Commons Recommended Citation Recommended Citation*. <https://scholarworks.uni.edu/etd>
- Lawson Anna. (2017). *Accessibility of information, technologies and communication for persons with disabilities*. 56.
- Mahghani, M., & Afjei, E. (2017). Carrier-based with unipolar switching technique current control of PMDC motors in electric vehicle applications. *2017 25th Iranian Conference on Electrical Engineering, ICEE 2017*, 1060–1065. <https://doi.org/10.1109/IranianCEE.2017.7985196>
- Marikeyan, D., & Papagiannidis, S. (2023). Technology Acceptance Model: A review. *TheoryHub Book*, 1–17. <https://open.ncl.ac.uk>
- Marlove. (2013). *SOC 335 – Marlowe Lab Exercise #1 - Example*. 2–3. http://web.csulb.edu/~hmarlowe/SOC455/Interpreting_Correlation_Tables.pdf
- Marsters, A. E., & Burke, P. J. (2011). *Title of Document: An Exploratory Study of The Assistive Technology Knowledge, Skills, and Needs Among Special Education Teachers and Related Service Personnel*.
- Monserate, C. A. (2018). Impact of Technology on the Academic Performance of Students and Teaching Effectiveness. *International Journal of Interdisciplinary Research and Innovations*, 6(1), 47–87. www.researchpublish.com
- Name, C., Name, T., Revd, R. T., Lungile, L., World Economic Forum, Fitzpatrick, T., Modeling, L. M., Measurement, F., Snowrift, O. N., Environmental, A. R., Regional, S. S., Power, E., Limited, G. C., Influence, T. H. E., Snow, O. F., On, F., Around, S., Embankment, T. H. E., Wind, I. N., ... End, F. Y. (2021). Introduction to Sensory Disabilities (VI, HI, DEAF-BLIND). *Paper Knowledge . Toward a Media History of Documents*, 3(2), 6.
- Network, O. A. T. (2008). *Assistive Technology Resource Guide Ohio At Network Assistive Technology Resource Manual*.
- Niland, N., Pearce, A. P., Naumann, D. N., O'Reilly, D., Series, P. B., Sataloff, R. T., Johns, M. M., Kost, K. M., Orsini, R. J., Medicine, T., Kalkman, J. P., Sataloff, R. T., Johns, M. M., Kost, K. M., Maiti, Bidinger, Assistance, H., Mitigate, T. O., Eroukhmanoff, C., & Licina,

- D. (2020). No Title. *Global Health*, 167(1), 1–5. <https://www.e-ir.info/2018/01/14/securitisation-theory-an-introduction/>
- Rose, D. (2001). Universal Design for Learning. *Journal of Special Education Technology*, 16(3), 57–58. <https://doi.org/10.1177/016264340101600308>
- Roestel, M. Van. (2016). A Collaborative Approach to Budgeting and the Impact on the Budgeting Process: A Case Study. *Dissertation of Walden University*, 197.
- Silman, F., Yaratana, H., & Karanfiller, T. (2017). Use of assistive technology for teaching-learning and administrative processes for the visually impaired people. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(8), 4805–4813. <https://doi.org/10.12973/eurasia.2017.00945a>
- Solomon, K. (2018). Teachers and 1:1 technology in classroom activities: A quantitative study comparing perceptions and stage of adoption. *Journal for Research in Mathematics Education*, 3(2), 55–78.
- Syariah, K. B., & Ilmu, G. (n.d.). *No The main focus is on the sense of health and the health-related indicators. Title. september 2016*, 1–6.
- Technology, C. (2021). *The Accessibility of Assistive Technology for Students with Disabilities in Higher Learning Institutions : A case of the University of Dar-es- Salaam in Tanzania*. VI(Ix), 103–110.
- UNICEF. (2022). The use of assistive technology in education: A guide for teachers and schools. United Nations Children’s Fund (UNICEF). <https://www.unicef.org/eca/media/30671/file/Teacher's%20guide%20for%20building%20capacity%20for%20assistive%20technology.pdf>
- WHO. (2013). Disability Report. *World Health Organization, March*, 1–7. https://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_12-en.pdf

APPENDICES



College of Education

Department Of Special Need and Inclusive Education MA post graduate Program

Dear Teachers;

General Instruction

- Writing your name is not necessary.
- Put  Mark for your choice in the box provided.
- Kindly, therefore, return the questionnaire upon completing each item appropriately.

My name is Alemayehu Kashiku, a student at Hawassa University, following a master's degree in Special Need and Inclusive Education MA Program.

I would like to extend my deep gratitude in advance for volunteering to devote your valuable time to fill this questionnaire. The study is being conducted by a postgraduate student at Hawassa University, College of Education a master's Art in Special Needs and Inclusive Education. The main objective of the study is "Accessibility and Utilization of Assistive Technology Influence on Academic Achievement of Students with Disability in Resource Center: The Case of Mizan Aman Town, Selected Primary School" for the partial fulfillment of Masters of Art Degree in Special Needs and Inclusive Education. The study is mainly for academic purposes. The researcher assures all respondents that the answers provided would be treated as confidential and will seriously be used for the purpose of this study.

Yours sincerely,

Contact Address: - Alemayehu Kashiku, e-mail: alemayeh42@gmail.com mobile No. 0916353574/0942617486

Thank you in advance, accordingly

Part I: General Background Information of Teacher's Profile

1. **Sex:** 1. Male ☐ 2. Female ☐
2. **Age** 1. 18-27 ☐ 2. 28-37 ☐
3. 38-47 ☐ 4. 48-57 ☐
5. 57 and above ☐

3. Educational level and qualification of Teacher's background

1. Diploma ☐ 2. Bachelor's Degree ☐
3. Master's Degree ☐ 4. Doctorate Degree ☐
5. Please specify others

4. Work experiences

1. 5 years and below ☐ 2. 6 – 10 years ☐
3. 11 – 15 years ☐ 4. 16 – 20 years ☐
5. 21 years and above ☐

Part II: The present state of assistive technology accessibility in resource centers for the academic achievement of students with disabilities.

I. Please Teacher indicates you're the present state of assistive technology accessibility in resource centers for the academic achievement of students with disabilities. Applied in your school resource center. The rating is as follows:

1. =Strongly disagree 2. =disagree 3. = Neutral 4. = agree 5. =Strongly agree

R/N	Items Related with Universal Design of Learning	1	2	3	4	5
5.	There is accessible Playground to considering students with disabilities.					
6.	All students have equal opportunities for play and recreation, regardless of their abilities or limitations.					
7.	The ramp on campus is easily accessible for students who using wheelchairs or mobility aids.					
8.	The ramps are well-maintained and free from obstacles that may hinder access for students with disabilities.					
9.	Classrooms have ramps for students with mobility impairments, visual aids available for students with VI, and designated seating areas for students with HI.					
	Items Related with Accessing Assistive Technology	1	2	3	4	5
10.	Resource centers are accessing assistive technology devices such as screen readers or speech recognition software, text telephone, mobility devices walkers and wheelchairs.					
11.	There are better collaborating with educators, parents, and community partners to enhance access to assistive technology for students with disabilities.					
12.	There are online platforms, websites and Jaw soft wire for students with visual impairments.					
13.	There are captioning and transcription services available for students who are deaf or hard of hearing.					
14.	The training and support provided to teachers and staff on using accessible technology tools.					

Please specify others the present state of assistive technology accessibility in resource centers for the academic achievement of students with disabilities. If it is not mention on above table

Part III: The barriers preventing disabled students from utilizing assistive technology to enhance their academic performance.

➤ On a scale of 1-5, please tick [✓] the response that reflect your level of agreement or Otherwise in each of the under listed statements.

1. =Strongly disagree 2. =disagree 3. = Neutral 4. = agree 5. =Strongly agree

	Items	1	2	3	4	5
15.	There is insufficient training of teachers and support staff on the use of assistive technology.					
16.	Ineffective and insufficient use of assistive technology is a major hindrance to Inclusive education.					
17.	Schools are not equipped with the necessarily assistive technological devices for students with disability.					
18.	There is inadequate funding from government on the purchase of assistive technology for schools.					
19.	Lack of awareness on available assistive technology.					
20.	Inadequate service delivery for assistive technology.					
21.	Learners with disabilities inability to access assistive technology.					
22.	Inaccessible learning environment for learners with assistive technology users.					

Please specify others the barriers preventing disabled students from utilizing assistive technology to enhance their academic performance. if it is not mention on above table_____

Part IV: The extent of the academic achievement of students with disabilities in the school setting.

On a scale of 1-5, please tick [√] the response that reflect your level of agreement or Otherwise in each of the under listed statements.

1. =Strongly disagree 2. =disagree 3. = Neutral 4. = agree 5. =Strongly agree

	Items	1	2	3	4	5
23.	Schools could be adapted more and integrated to technology and assistive technology.					
24.	Using Assistive technologies are improving high academic results of students with disabilities.					
25.	Effective monitoring of assistive technology is needed for successful implementing of inclusive education for students with disabilities.					
26.	There are differences in academic achievement between students who use assistive technologies and those who do not.					
27.	The use of technology leads to improve the participation of students with disabilities in mainstream classrooms.					
28.	Computer programs or devices are most effective in supporting academic achievement for students with disabilities.					
29.	Assistive technology is supporting the academic success of Students with disabilities.					

Please specify others that the extent of the academic achievement of students with disabilities in the school setting. If it is not mention on above table.

Part V: The relationship between students with disabilities' academic progress in resource centers and the accessibility and use of assistive technology.

➤ On a scale of 1-5, please tick [✓] the response that reflect your level of agreement or Otherwise in each of the under listed statements.

1. =Strongly disagree 2. =disagree 3. = Neutral 4. = agree 5. =Strongly agree

	Students with Technology user.	1	2	3	4	5
30.	Have the ability to quickly and easily access a wealth of information by using visualization and modeling technology.					
31.	Technology has a direct impact on students' interest for teaching learning process.					
32.	Technology user students have high academic achievement on school activities.					
33.	Images and videos should have text transcripts and/or captions for audio content for students with hearing impairment.					
	Students with Non -Technology users	1	2	3	4	5
34.	May have trouble utilizing modeling and visualization tools to locate pertinent information.					
35.	Didn't interesting to coming school for learning process.					
36.	Students have low academic achievement on school activities.					
37.	For pupils who have hearing impairments, images and videos shouldn't feature written transcripts or subtitles for audio content.					

Please specify others that relationship between students with disabilities' academic progress in resource centers and the accessibility and use of assistive technology if it is not mentions on above table.

Part VI: Interview Questions for School principal, supervisors, education office Administration, woreda education office expert and Zone education office expert.

1. What is the current level of accessibility of assistive technology devices in the resource center?
2. Is the equipment in the resource center adequate to meet the individual needs of students with disabilities?
3. Does the resource center provide training and support to teachers and students in the use of assistive technology devices?
4. What are the challenges you have faced in accessing or using assistive technology tools in the resource center?
5. What improvements would you recommend to make assistive technology more accessible and useful to students?
6. Are differences in academic achievement between students who use assistive technologies and those who do not? How?
7. How can the use of technology lead to improved inclusion and participation opportunities for students with disabilities within mainstream classrooms?

Part VII: FGD Questions for Special Needs Education Experts

1. What is the current level of accessibility of assistive technology devices in the resource center?
2. Is the equipment in the resource center adequate to meet the individual needs of students with disabilities?
3. Does the providing to training and supporting program for teachers and students about the use of assistive technology devices?
4. What are the challenges you have faced in accessing or using assistive technology tools in the resource center?
5. What strategies we should follow to implement the accessibility and usefulness of assistive technology tools for disabled students in the in resource center?

Part VIII: Observation Check List

The observation check list was include various categories such as physical accessibility, availability of assistive technology devices, training provided to students and staff, and overall utilization of these technologies. And also, it includes impacts of technology.

	Questions	Yes	No	N/A
1.	Is schools physical environment accessible for individuals with disabilities?			
2.	Are there ramps available for wheelchair users?			
3.	Are the resource center has accessible entrances and pathways?			
4.	Are the devices suitable for various types of disabilities (e.g., visual impairment, hearing impairment, mobility impairment)?			
5.	Is the resource center has sufficient assistive technology devices available for students with disabilities?			
6.	Is a Students' with disabilities having easy access to use assistive technology when needed?			
7.	Are there trained staff members available to guide and support students in utilizing assistive technology effectively?			
8.	Are students with disabilities actively engaged in utilizing assistive technology?			
9.	Do the students participate in teaching learning process?			
10.	Are classrooms having adjustable desks or seating arrangements to accommodate students with physical disabilities.			