Availability of Voice-Recognition Devices to Support Visually Impaired Students in Saudi Arabian Universities

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Abstract

This study investigates the availability of instructing visually impaired students utilizing voice-recognition devices in universities in Saudi Arabia. The study also compares the learning encounters of understudies both recently and after the consolidation of such innovation into their instruction. The descriptive approach was utilized for the reason of depiction in this investigation. The study used observation and interviews to collect data, which was gathered from 50 participants. The study found that an unfinished program, a long learning process for the console and images, and a deficiency of qualified computer voice integration are all things that work against the device's guarantee and hold it back from coming to its full potential. Students' degrees of excitement might change anyplace from typical to exceptional. The educational modules will be presented in stages, depending on each student's current skill level. It is accepted that students' ability to form viable utilize of computers within the learning process will proceed to make strides as a result of the expanding number of intercessions that are getting to be open.

Keywords: Talking Computers, Voice-recognition, Visually-impaired Students, Availability.

1 Introduction

Visual impairment may display challenges in numerous ranges of a student's life, counting instruction, social life, mental well-being, physical well-being, relaxation exercises, and career chances, to specify fair many of these ranges. All of these issues got to be expected and arranged for by giving blind students instructive administrations, information, exhortation, and training, in expansion to a different extent of options that are presently accessible. That is to say, extra endeavours inside the setting of coordinates and multidisciplinary techniques are required to avoid the rise, engendering, and irritation of these issues, all of which have the potential to obstruct the development and improvement of a blind student. In other words, the setting of the technique is critical (Kamra et al., 2023).

Instructive challenges for blind students are straightforwardly related to the seriousness of their visual impedance (Alabi & Mutula, 2020). Because of the troubles displayed by these boundaries, it may be challenging for blind students to require a portion of instructive exercises. Therefore, learning models

and administrations are required to be given in schools for the blind to make it easier for the students to comprehend the instruction that is being given by the educators (Indriastuti et al., 2020). Learners nowadays, have to procure particular abilities in arrange to utilize the browser successfully when browsing the Web. The Web incorporates all sorts of data and information based on the different media components. However, the outwardly impeded learners are denied this very important learning instrument. The outwardly impeded learners are cleared out to memorize utilizing the routine strategy of 'talk and Braille' by the educator.

According to Pollock et al. (2021), there are two particular forms that, when combined, lead to an increment within the levels of information, abilities, states of mind, and capacities held by each person in a society. These forms are the dispersal of instructive administrations and the improvement of human assets through the medium of instruction (Slope & Stewart, 2000). Both of these forms are facilitated by instruction. This can be a kind of social welfare that comprises locks-in exercises with the objectives of re-establishing one's self-esteem and developing potential in expansion to cultivating self-development and the capacity to be part of society. Two extra objectives of this kind of social welfare activity are for the member to work on bettering themselves and expanding their capacity to be associated with other individuals within the community (Rahayu et al., 2021). The arrangement of openings for blind individuals to take part usefully within the enhancement of social welfare and equity in education is essential in case we are to supply them the plausibility to do so, which is an exertion that is deliberate and arranged to set up a learning environment to supply students with the opportunity to effectively create their potential in a way that is useful to both themselves and others (Chime & Silverman, 2019).

When it comes to teaching blind students, certain help, forms, and approaches are required to be included in their education, which must be made accessible to them. It is pivotal that this be worn out to guarantee that blind students will be able to benefit despite the truth that they have a visual impedance (Greenhow & Chapman, 2020). Blind students have a critical drawback in terms of their capacity to memorize. This be done so that blind students can proceed to participate within the learning handle indeed if they don't have to locate by utilizing their other faculties, such as hearing, touch, scent, and taste. This be done so that blind students can proceed to take an interest within the learning handle indeed on the off chance that they don't have located. They will be able to proceed with their development and improvement as a result of this (Sari et al., 2019).

Assistive devices are divided into two types: those that use advanced technology and those that use simple technology. High-tech tools are very advanced and need special training because they might have difficult features like predicting words and recognizing voices. Simple tools are easy to use and don't need much training. Students are considered to be blind in case they have had issues with their vision to the point that they are incapable to form full utilisation of their capacity for seeing (Verkholyak, O., 2021). These students are as it were able to depend on their other faculties, such as their hearing, touch, taste, and scent, to operate appropriately. This is often since they were born without sight. Landau et al. (2009) expressed that blind students have a more troublesome time interfacing with their peers and indeed learning unused things as a result of the challenges that they confront. Blind youths will have a more difficult time learning modern things as a result of this. Subsequently, the lessons that are displayed have to be altered so that they may be adjusted to meet the wants and capabilities of the students who are being prepared.

Scientists have created ways to help people who can't see use a computer. They made tools that let people touch the screen or talk to the computer instead of using their eyes. Some machines can read out what's on the screen, and printers can display things in Braille. These things make it so people don't have

to rely on seeing things as much (Bakouri et al., 2023). Many tools are available for people who cannot see well, to help them do things.

Saudi Arabia started using the Internet in 1999. In 2008, it was ranked 46th in the world for its ability to use the Internet well. Saudi Arabia is spending a lot of money on e-learning. They spent $125 million on it in 2008. Online learning in Saudi Arabia can help to reduce the number of foreign workers in the country. In 2003, the Saudi government spent 24% of its money on education. Online learning can make teaching and learning better and cheaper for the government. E-learning saves money for schools and colleges. That's why many of them like to use it. This means that Saudi Arabia wants to save money by using technology to improve education. They hope to make this change by the year 2030. The countries in the Gulf, like Saudi Arabia, are not using e-learning as much as they should. This is because it's hard to use techniques that help people learn (Ganesan et al., 2022).

The objective of this study is to investigate the availability of voice-recognition devices in Saudi Arabian Universities to help visually impaired students perform their educational tasks. The study explored whether most universities have specific software and devices to assist blind students on campus.

2 Methods

Research Design

The study utilized both a descriptive and a quantitative approach. This strategy is utilized to supply an outline of the viability of the learning process via voice-recognition devices to blind students, as a result, the objective of this investigation is to display an outline of the efficacy of the learning process. To gather information for this study, the researchers depended on several particular approaches, observations, interviews, and documentation.

Participants

The sample of the study included 50 persons from 8 universities. The participants included students, instructors and administrators.

Data Collection

The study collected data through its instruments, interviews and observations. Both of these approaches are utilized in arrange to gather information and data that commonly back a diagram of the adequacy of the learning process accomplished by blind students through the utilization of computer-mediated talking. The objective of this inquiry is to decide whether or not blind students can benefit from the utilisation of computer-mediated talking.

3 Results

A certain level of challenge is displayed by utilizing voice-recognition devices. For example, for blind individuals to be able to utilize a computer, they must begin with typing orders on the keyboard of the computer, which is a very challenging process if the keyboard does not support the Brille system. The results of the interviews showed the lack of modern devices that help students with visual impairment perform their educational tasks. Most of the interviews mentioned the challenges blind students have with the existing devices and software.

Blind students are incapable to get a handle on a talking computer as well as arithmetic addresses at the same time since the innovation accessible to them is deficient (Moon et al, 2012; Glaser, 2000). Arithmetic courses contain images that cannot be studied by a talking computer (Österholm, 2006). Students who are blind have a gigantic challenge in overcoming this deterrent. Since of this, blind students are incapable to require utilize of their instructive openings to the most extreme degree.

The interviewed individuals showed that such a category of students requires a certain strategy to be adopted by universities. Since each individual has a one-of-a-kind and particular way of learning, it is not hard to create a unified system for voice recognition to assist these students. Usually due to the truth that every single person has their claim one-of-a-kind and one-of-a-kind way of learning. All through the course, it got to be clear that the youthful individuals who were selected for this program were required to go through a wide variety of challenges to understand the data being presented to them. For example, it may be troublesome to get a handle on the information that's advertised; typically, one reason why it is vital to convey the data more than once. However, there are a few students who are enlisted in the program, all a sudden discovered that they are incapable to concentrate or take an interest in instruction for the greatest of one hour at a time.

The instructor needs to make an exertion to incorporate a diversion into the lesson to successfully divert the student's learning on the substance that's being instructed to them. There is too much communication going on in both directions, such as with the young student who is exceptionally hesitant and encompasses an inclination toward a lack of involvement within the classroom. This kind of communication is taking put in every classroom. Students regularly have inconveniences expressing their needs, and they react when the teachers give them amazingly exact directions on how to memorize something modern. According to Barr & Tagg (1995) and Svinicki (1999), students respond when the educator gives them exceptionally clear bearings on how to memorize something modern. Based on the number of events of issues with learning challenges in blind students, it is included on a moderately unassuming scale and may still be controlled inside the system of the family and the university environment.

4 Discussion

The use of voice-recognition devices, such as talking computers helps blind students in doing their education. There are several learning strategies, each of which is adjusted to meet the specific prerequisites of each person, as implied by overcoming the challenge postured by the participants' broadly shifting degrees of scholarly trouble. In doing so, they can meet the wants of all of their students. This incorporates things such as instructive apparatuses that the student truly appreciates utilizing for students who battle to effectively keep up their concentration, as well as contrasts in visually impaired students. They were able to urge data from the web and more readily compose papers without having to hold up for a teacher to help them, which contributed to their expanded level of freedom both recently and after they learnt computer talk. This held genuine both recently and after they could communicate in computer dialect. It is conceivable for blind individuals to sort, indeed create books, and change their work without the help of located individuals.

Several data are made impressively less difficult for individuals who are outwardly impeded by the utilisation of a computer that talks. When a student is taking portion in exercises at school or on campus, they will discover that having a Talking Computer, which in this case comprises a tablet or netbook, is of awesome advantage to them. This disclosure will happen when they realize that having a Talking Computer gives them an advantage over other students. In expansion to working on assignments within the shape of papers or articles, indeed amid examinations, an individual who is blind has the choice of

doing so specifically in a course with other mindful students by asking for a softcopy adaptation of the task from the teachers (Abi Hamid et al., 2020). This choice is accessible in any case whether the individual is working on the task sometime recently or during the exam. This can be something that can be done notwithstanding whether or not the person is truly getting to take the test. The last answers to questions may be given either on a streak drive, in an e-mail, or by combining all of these choices.

One of the most important challenges the interviewed participants mentioned is the availability of software in the Arabic language. Some students argued that they were unable to use some voice-recognition devices because their software does not support the Arabic language, which created a barrier for them to fully understand the content of some lessons. In reply to this challenge, some administrators at universities claimed the lack of funding for updating this software and the lack of experienced personnel to teach students about the use of these devices.

The utilization of a computer framework that is competent in communication for students who are blind is also very useful and beneficial for studying several topics. The discoveries that appeared prior make it very clear that for blind individuals to be able to use a computer, they must be able to freely set up the computer in their possession. This was the conclusion that was arrived at after the truths had been displayed within the way portrayed some time recently. Blind individuals can turn on a computer by basically squeezing the control button that's found on the device, and after that holding up calmly for the computer to bring up the desktop. This strategy is precisely the same as the one that's utilized by located people in general. To begin with, employing a computer, a blind individual is required to turn on the machine and after that enact the screen of the computer program.

The JAWS application for Microsoft Windows and the NVDA program are two illustrations of well-known screen program alternatives. The screen computer program is utilized very frequently. After the screen application has been actuated on the device, it will too be conceivable for blind individuals to utilize the computer in a way that is suitable for them to do so. Blind individuals do not utilize the mouse to explore the computer; or maybe, they utilize the console to execute information utilizing short-cut features or key combinations. Blind people are incapable to explore a computer by utilizing the mouse in any capacity (Levin, et al., 2000; Balan et al., 2015). When wrapped up employing a computer, understudies have the choice of turning it off by executing a command that's an easy route. This may be done by utilizing the computer voice command.

The help in browsing provided by a computer that can discuss with the individual utilizing it is something unique. The introduction of the information makes it liberally apparent that those who are blind may have the opportunity to browse freely by perusing what is appeared on the screen of a computer given the machine in address is outfitted with a chunk of a program known as a screen browser. Blind people who are examined with the help of a talking computer have a simpler time comprehending the data included within the content they are perusing, which empowers them to improve their reading capacities (Raskind & Higgins, 1998). Agreeing with Alvermann, (2001) Perusing employing a talking computer makes it less likely that blind people would battle with perusing. Usually, since the computer peruses out loud to them.

The capacity to sort on a screen is something that people who are blind will get to learn for them to be able to total their schoolwork and other sorts of printed material (Colwell et al., 2002). This includes information on the area and work of each button on the screen, as well as the authority of the 10-finger writing method. When editing or designing reports for individuals with visual impairments, they utilize the SorchCut apparatus that's included in Microsoft Word. Getting to the web using a talking computer instead of through a conventional web browser. According to Vtyurina et al (2019) and Dosono et al (2015), individuals who are blind or outwardly impeded can openly browse the web much appreciated

a program called a screen browser, which has the control of perusing out loud screen shows unmistakable on websites. This data may be seen within the information that was displayed sometime recently. Blind students can carry out any action of their choosing on the web, such as looking for and transmitting data, whether it be perusing the news, sending email, or communicating through social media (Vicente & López, 2010). Freitas & Kouroupetroglou (2008) stated that blind students are moreover able to get to all of the substance that is accessible on the web. This was all done to guarantee that blind individuals can keep up with the huge breakthroughs that are being made in both innovative and communication areas in this time of digitalization.

5   Conclusion

This study aimed at investigating the availability of voice-recognition devices and media to help visually impaired students perform their educational tasks. The study showed that voice-recognition devices are either unavailable to blind students or they lack update. The results showed reluctance from the part of blind students to use the exisiting devices. However, many students mentioned that having computers is helpful in their studies. Usually, since it makes the method of learning less difficult for them, but at the same time, it requires professional updates and training on how to us these devices and how to keep up with their updates. The students mentioned that voice-recognition devices help them in learning as well as in bringing an extraordinary excitement to keep learning and attempting modern things through the direction given by friends, teachers, and what researchers energize learners, how to utilize a talking computer. This is often why they need to have both of these qualities. Talking computers will be accessible for utilize or get to understudies, and they will be able to utilize them concurring to their needs, in specific as a medium for instructive purposes. This was not as it was replied to that address, but it moreover provided an arrangement to the detailing of the issue that the ponder was looking into.

Acknowledgements

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