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by R S

Week 7 topic 1

Assistive Technologies for Computer Use

Assistive technology devices have played a critical role in allowing disabled students to grasp their computing careers and get job opportunities like other students. Computers operate by taking input from individuals and provide output in several formats. Therefore, students can use an alternative input device to enter instructions and use alternative output devices to receive outcomes efficiently. The first alternative input device is the eye-controlled mouse movement (GT3D). Kumar & Chourasia (2018) stated that GT3D is a device used to provide disabled individuals with the capability to control computers by utilizing their eyes. Also, the device used special software and cameras involved in the glasses that an individual will be required to wear. This allowed the user to control the mouse by moving their eyes. Another device is the Sip-and-Sniff (SNF), which enables one to control onscreen activity by breathing (Kumar & Chourasia, 2018). This is essential for those individuals that cannot utilize their hands. The device comprises the unique wand that a person wears in their head or chin and they can send signals to the keyboards using air pressure.

On the other hand, alternative output devices utilized include screen magnifiers and screen readers. Screen magnifiers are vital in expanding the screen's content with several magnifications' levels and fonts. The technology is both in software and hardware form. Screen readers also are to help blind people and it includes screen reading programs and braille translation that will help in reading and speech synthesis.

Students can benefit when using the TTS app voiceover. Voiceover app was developed by IOS and is aimed to provide users with the ability to navigate the device even if they do not

see it. The app reads the screen to the user and offers audible descriptions. Users can also know the battery level and a person calling them. There are other TTS solutions for the blind apart from the one mentioned. For instance, window-eye is a screen reading application developed by windows and is used by blind and low vision individuals (Satra et al., 2021). The app converts the Windows operating system elements into a synthesized speech that provides full access to windows-based computer systems.

References

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Satra, T., Shah, M., Lad, A., & Correia, S. (2021). Voice and Gesture-Based App for Blind People. In *Data Intelligence and Cognitive Informatics* (pp. 53-75). Springer, Singapore.

Week 7 topic 2

Assistive Technology in the Classroom

Students with low vision require more accommodation both in the classroom, reading and the use of computers. Equality in education plays a critical role in ensuring that all people obtain the same education and learn what other people are learning. Low vision students are determined to understand and grasp the knowledge the same way other students learn. Therefore, when using computers, the keyboard is designed to fit blind individuals. For instance, the use of braille keyboards has gained substantial benefit in low visioned students (Schneider, 2001). Braille keyboard is a specialized input device that allows students to type and enter text or instructions for the computer in braille. However, to the increased technology, braille keyboards have been developed to be as small as possible to allow individuals to carry them with ease. This type of

keyboard will allow low-visioned students to use computers and input instructions the same way their counterparts do.

Moreover, students with low vision will also need to be supported in the reading process. Reading help can be done through different strategies. Nevertheless, the paper will focus on the large texts. Large texts, including enlarged photocopies and large print books, will allow them to read with ease. According to Lueck et al. (2019), the large size is as critical as the quality and typeface to ensure efficient reading. The font size for large prints should be at least sixteen to eighteen points. The large print has a disadvantage on availability because most of them are produced with low contrast, making them hard to see.

Classroom experience can also be enhanced through the use of note-taking devices. Note-taking devices will allow individuals to write assignments and record lectures for reading and revising at other times. Lueck et al. (2019) defined a note-taking device as medium and portable equipment that students can utilize to take notes in class using braille or a standard keyboard. Also, the note-taking devices can improve reading by using them to listen to podcasts and quickly transcribe information to allow them to communicate with tutors and other students. The disadvantage is that most of them require Bluetooth connection and wireless fidelity, hence the need for Bluetooth-enabled devices and connection costs.

References

Lueck, A. H., & Goodrich, G. L. (2019). Trends in low vision education. *The Routledge Handbook of Visual Impairment: Social and Cultural Research*.

Schneider, K. (2001). Students Who Are Blind or Visually Impaired in Postsecondary Education.

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