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Assistive Technology in Higher Education

Introduction

College institutions are responsible for providing appropriate accommodations for students with disabilities. The Office for Civil Rights commission is accountable for guaranteeing that students with disabilities are provided with essential resources and get equal access similar to those offered to them without a disability when progressing in their college studies. Moreover, institutions need to offer equal chances to ensure all students can be engaged with all other learning programs, such as trips and other non-academic services. Nevertheless, the civil rights department provides guidelines and responsibilities to the secondary institutions against making decisions based on stereotypes. Also, the department ensures that the institutions follow the section 504 guidelines that ensure that all students with disabilities are provided with equal chances for engaging in non-academic and extracurricular services and events and explains the delivery of distinct athlete openings. Nevertheless, the Americans with Disability Act also focused on guaranteeing equal access to college institutions for students with disabilities.

The increase in college students' equal chances in academic and non-academic access to resources has gained immense recognition. Therefore, the purpose of this paper is to explain the blind and hard-on-hearing students' assistive technologies while in college institutions and ensure they assistive technologies such as Hearing aids, videophone, and Visual alert are discussed. Also, the paper will explain several assistive technologies used by the blind, such as JAWS,

Kurzweil education, and Braille. Similarly, Stanford and Yale university school for middle-income students will discuss how they provide assistive technology to blind and hard-of-hearing students. Finally, the report will conclude by explaining the appropriate preparations for pre-college knowledge, experience, and training for assistive technology use.

Technology for the Blind

Individuals with disabilities pass through significant challenges in their life, especially during their life at school. Disability can occur in different ways, such as lack of sight, hard of hearing, and mental problems. Therefore, blindness is a state where one cannot understand or perceive, having impaired or absolutely no sense of sight. The condition can occur in different ways, for instance, by birth or an accident. Moreover, in birth cases, the disability can be inherited from parents or relatives. The blind have experienced darkness since birth, while some have experienced vision loss due to conditions. The disabled can qualify for disability benefits and usually work as provided if they meet the SSA requirements (Ersanty et al. 137). Similarly, one can also be blind and deaf at the same time. In the modern world today, technology has developed very fast in ensuring that the disabled can cope with the world as ordinary people because most states have introduced technology for the visually impaired.

Moreover, the emergence of assistive technology is significant in solving challenges that blind people face. For instance, essential technology is developed to improve the functional capability of people living with a disability. Besides, education plays a critical role in individuals' life because it comprises reading and writing. Therefore, through software and applications developed for helping the visually impaired, these individuals can learn efficiently. One of the examples of assistive technology is the JAWS screen recorder Ersanty et al. (141), which stands for job access with speech. JAWS allows one to read the screen with a text-to-

speech output. Also, the application supports a windows operating system that is primarily used in mobile phones and laptops.

Similarly, JAWS can work with multiple pages such as websites, help systems, and web-based applications (Ersanty et al. 138). JAWS provides speech and braille output for computer applications on a PC. In addition, JAWS has helped many visually impaired students complete their studies and even work like ordinary people. Although the installation and implementation of the program are costly and pose challenges to the government in ensuring its effectiveness, it is essential in enhancing the access of learning resources to the students.

Another assistive technology for the blind is Kurzweil education which is used to help people who are visually impaired. Kurzweil education is software that ensures a literacy problem-solving mechanism in place. Despite Kurzweil's developing Kurzweil application, it also provides two main software products to its clients, including Kurzweil 1000 and Kurzweil 3000 (Fowler et al. 20). Kurzweil 1000 is a software program that offers easy entree to most printed sources and presents them in a field inappropriate reading form to enable work completion via computer. On the other hand, Kurzweil 3000 is an assistive technology that provides a learning platform for people with a learning disability. The software is intended to read audibly web-based, digital, or skimmed print material into an mp3 system to offer audible files to listening (Bakken et al. 455). Another assistive technology is Rrefreshable braille which offers admittance to data on a computer screen by automatic levitation and dropping different pins in braille cells. The technology reveals up to 80 characters on a screen and can be refreshed. Therefore, the advantage of braille display over synthetic speech is that it provides through entree to data. Nonetheless, it has a shortcoming of the cost because students from impoverished backgrounds cannot afford it.

Technology for the Deaf

Hearing problem is among the common issue in the medical setting. Therefore, individuals pass through significant issues which might interfere with basic life needs. Deafness is categorized as a disability under the ADA because hearing is also classified as a mental disability. Nevertheless, technology has been put in place to help individuals with disabilities. Fowler et al. (18) claimed that over 5% of the world population require rehabilitation to treat their shortcomings on hearing problems and estimates that by 2050 more than 700 million people will have a hearing problem.

The increase in hearing problems resulted in the development of assistive technology in helping them live a normal life. Therefore, hearing aid was developed, an electrical device intended to advance the degree of hearing. Although individuals have different hearing capabilities as Some can hear but to a low time, while others cannot hear anything at all cost, a hearing aid can help because it is fixed to wear in or behind the ear. Besides, the purpose of the technology is to make the sound loud enough because the mic picks sound around you and enlarges the sound around the ear, increasing hearing. Similarly, an amplifier makes the sound louder, and the receiver sends the enlarged sounds into the ear (Fowler et al. 23). Furthermore, not all people who have hearing damage can profit from hearing aids because hearing aid cannot collect all the sound making the person unable to communicate freely as some of the information is left.

Another technology is videophone which is a device invented and applied to help people with hearing problems. Videophone transmits information and receives both audio and video signals over a telephone line at the same time. Similarly, it is a receiver with a video exhibition, proficient in simultaneous video and audio communication between people in real-time (Soetan

et al. 4250). The deaf cannot listen to the audio but can look at the video and figure out the message.

Moreover, visual alert system is another assistive technology for the deaf. Therefore, it is a system that detects and promotes remote visual alert to the doorbell, telephone calls, and sound of babies crying to convey the message to the deaf person. A deaf person can be notified on issues by use of clarity alert master, central alert system receiver, bell visit alert system, and krown KA 300 alert system (Soetan et al. 4252). Therefore, all the assisting technology devices have been used to make the world a better place to live and become happy. Furthermore, all human beings are equal and should be treated fairly, including the disabled, as they have equal rights.

Comparison of Assistive Technology between Stanford and Yale University

Education is almost an essential requirement for everyone who desires to achieve knowledge. The education sector is putting efforts into ensuring that everyone in the world and wherever you can acceEducation. Schools have increased tremendously over the years across the globe. In pursuit of a better life and a better world with civilized people, philosophers concluded that education and learners were willing to learn. As a result of this, the health care system and other social realms have provided more support to high education. Following an increase in the number of students with special needs who are enrolling for high education overseas, the universities need to plan to ensure that the disabled student acquires a conducive environment despite their conditions to improve their lives.

Students with particular needs will require to use assistive technology to match regular students to pursue their careers. Therefore, various schools have provided mechanisms to offer disabled students and the less fortunate on realizing these. Universities like Yale University and

Stanford University graduate students from all over the world. Students of different caliber are well presented in this university. The upper-middle, middle and lower classes are all represented, but the highest is from the upper-middle level to the lower. The study of these two universities creates a broader picture of education for the disabled is catered. Do they have an assisting technology to ensure quality education for the disabled? Is there enough skilled labor force to provide quality learning in the schools?

Stanford University is a university for students ranging from the upper-middle class to the lower level. Therefore, it is seen in the number of students and the amount of school fees they pay. The mechanism has been put in place to ensure that the disabled student has a place. For example, one of the assisting methods is sign language interpretation because it is a service made achievable by using different sign language interpreters to facilitate communication in other fields. Also, it operates when a hard-of-hearing translator works as a team associate with a sign language interpreter who can hear.

Furthermore, communication access real-time translation is another assistive technology at Stanford University. CART providers change words into immediate text in real-time through laptop or television screens hence, used for deaf students or hard at hearing (Fowler et al. 19). It is a suitable mechanism because Stanford's students come from all corners of the world, and most of them are not familiar with American sign language.

Another technology is Teletypewriters, also referred to as telecommunication devices for the deaf. Telecommunication devices for the deaf are instruments of communication used by individuals who have hearing problems communicating via the telephone. Therefore, it is equipped with a small keyboard and a display monitor, allowing users to share by typing their message. Similarly, most students use a standard method throughout the world because the

device is less expensive and affordable by many students, including the less privileged. Another device is portable assisting listening devices. The device has a built-in capacity for the use of ALDs (Fowler 23). Other examples with a sound system of installing ALDs on a temporal basis include Annenberg AND Cubberley. Similarly, the system helps the deaf and the blind who cannot see or listen to the information put in place or set aside for actual learning. Therefore, Stanford University uses the system to help students throughout the world who are less privileged.

The second Univesity is Yale which has ensured quality education throughout the world. Yale University can handle the middle-income students because it comprises of the student around the world. Similarly, the university has incorporated technology to ensure equal access to study materials to students with varying abilities. Students with disabilities have been able to continue with their studies at Yale University. People with specific disabilities use display technology to access online resources. Software and hardware have been adopted, commonly referred to as assistive technology. For instance, Screen readers are assistive technology used to listen to the content on a webpage. Therefore, it is essential software for visually impaired or blind learners. A screen reader conveys the test on a computer to form the visually impaired process (Fowler 13). Normally, most screen readers operate through a voice reading text loudly and communicate information via braille.

Text -to- speech technology is an assistive technology that reads digital text aloud. It is also known as read-aloud technology. A touch of a figure touch -to- speech technology can transfer words on a computer or other digital device and convert them into audio. Therefore, touch-to-speed program converts text to audio (Fowler 17). In addition, it helps people with

hearing problems, but those using hearing aids process the information. Assistive technology has ensured that disabled students are not left behind when it comes to education and knowledge.

Both universities have been at the forefront in ensuring that quality education over the years has been upheld. Students, despite their conditions, are being taken care of and provided with appropriate resources in ensuring they focus on achieving their goals. Thank you for the invention of assistive technology that has made it possible for everyone thorough the globe not left behind. It is essential to note that focus on assistive technology has been taken on the students with hearing problems in both universities. Therefore, if a mechanism could be put in place to emphasize other students, it would be a good idea. Stanford university is a step ahead in using assistive technology, which has helped its students acquire quality education with excellent degrees that help them safeguard good jobs.

Types of Preparation For College Students

Students with a disability need to be prepared early in understanding the right directions and accommodations they will require while on the campus. Therefore, this process will require not only the student alone but also their parents. Moreover, the transition from high school life to that college is a gigantic sprint. Thus, to develop in college necessitates students to be step up and deal with their challenging roles, including interacting with other students and associating with professors (Miller-Warren 33). Students with communication barriers, such as those that are deaf, can face difficult situations to exchange information and be involved with new friends. Although, deaf students for example, after completing their secondary education, are eager to join college institutions and have a different experience than what they are used to, preparing them earlier before they enter the college will be of great help in making them become aware of their rights and reduce the anxiety and depression that they may get.

One way of preparing the deaf students is by providing appropriate information that will make them aware of how they can make the college institution recognize their disability. Therefore, the suitable methods pre-college students can use in informing the institution about their disability is by contacting the college disability office (Miller-Warren 33). Nevertheless, many students do not realize how essential it is to inform the institution concerning their disability because they know they do not require accommodations. On the other hand, the institution is responsible for helping the student attain the best or discounted assistive technology that will align with their budget. Besides, students can get prepared by encouraging them to see their prefessors personally befor beginning their classes (Miller-Warren 34). This will ensure the professors gets to know the student as an individual. Therefore, communicating with the professor does not mean that the student must go and see them physically, but they can use email. Developing a suitable relation between the professor and the student is essential in helping the student understand the reading resources.

Students will also be advised on bringing what they require to communicate. The emergence of technology has resulted in significant changes in the enrollment of students with hard in hearing; therefore, many disabled students are attending college institutions (Miller-Warren 34). Nevertheless, students have a hard time entering college despite colleges providing students with hard-on hearing with interpreters. Regrettably, the interpreter might not be present when the student requires them; therefore, the students need to advise on carrying what they need to communicate with their friends and educators.

Another preparation is to ensure the student has a local health professional that can take care of their equipment or treat them in case of emergency. For example, a hard-on-hearing student can face substantial challenges when they are at school, especially when their

technologies have broken. Therefore, as a hard-on hearing students, they can find an audiologist around the school if they usually require them while at home (Miller-Warren 32). The expert should be both affordable and contented. Besides, getting to understand where the shop for purchasing the hearing devices is critical in understanding where one can get them when an emergency has occurred. Nevertheless, when one is aware of the region, one can quickly get thequipments such as batteries for their technologies.

Blind students are also passing through significant challenges when they are transitioning from high school to college institutions. However, when they are prepared earlier in there before joining, their life can be easy and straightforward in adapting to the new environment. Also, preparing blind students requires them to get informed on what is needed and provide them with insights that will help them adapt quickly to the environment and learn efficiently. For instance, one way to prepare them is to realize the services every college provides. Each disability service office in the institution is varying; therefore, when selecting a college, students are advised to schedule an appointment to meet the disability office of the institution and ask them basic questions that will make them understand, such as the number of students served by the institution that require the same accommodation like them (Miller-Warren 36). This will make the student know if the college is devoted to offering their services to the blind, depending on their number.

Although friends play a critical role in individual education because they can help in forming a blind student with important information on the school events and activities, students need to learn and understand that college education is different from high school before they get to understand what is happening; however, informing them will help talk to their roommates and friends to ensure they are a great resource in supporting their education career. Also, this will

make them realize the time their friends or roommates are to activity and acquire several social chances. Nevertheless, although friends are of great importance, the blind student needs to understand the difference between a friend and the person giving them help.

Pre-College Knowledge, Experience and Training in AT

Understanding the basic information required on assistive technology is essential for preparing the student to join college institutions. Before being enrolled in college, students always have enormous expectations in advancing their skills and knowledge as well as gaining other experience as they go to the new learning environment (Miller-Warren 32). Nevertheless, although most complex hearing and blind people always face excellent challenges as their knowledge, experiences, and training obtained before joining colleges will determine their transition.

Students at high school are not prepared for the type of assistive technology they will use because their support in high school is not the same as what they will receive in college. Although getting experience in high school is good because they had a qualified teacher for the visually impaired, college is different because they will find a new team to teach them. Also, college institutions obtain funds from the funding organization to ensure suitable adjustments and support students' requirements (Bakken et al. 448). Therefore, this is referred to as the learning support that provides several equipments that the institution will provide and check on what works best. For instance, one of the supports the college can provide is assistive technology.

Most students do not have pre-college knowledge concerning the assistive technology they can be offered. For example, there is a wide range of Assistive Technology that the college

offers, as explained at Stanford and Yale University. However, more of the blind and hard-on-hearing technologies are also available in the market, making the student unable to recognize the best recent technology. Technology is advancing immensely, making it challenging for the students to understand the best, hence the need to contact professionals in the assistive technology to advise and guide the students on the right and latest products to purchase in the market.

Moreover, training provides essential knowledge in understanding the different assistive technologies. LaTeX, Braille, and Nameth Braille. LaTeX is a group that was introduced as a typesetting language for mathematical calculations. Most students are not trained in pre-college knowledge concerning the LaTeX and Braille assistive technologies. Therefore, LaTeX technologies are utilized for drawing pictures and developing diagrams (Ersanty et al. 139). Similarly, by typing the required text on the keyboard, an individual can denote all the measured signs from every straightforward to the most progressed. Although many students do not know about assistive technology, college institutions will need to provide proper accommodations to match the student's disability.

Pre-college knowledge and training of Nemeth Braille are also limited because most students joining colleges do not understand how the technology works until they have been approved to use it. Nemeth Braille is critical in allowing several mathematical features because it has utilized well-organized classifications of Braile characters to denote mathematical signs (Ersanty et al. 143). Also, the Nemeth codes comprised distinct signs to indicate intricate edifices, including subscripted subscripts. Despite the intricacy of the Nemeth Braille, it is tremendously efficient.

Conclusion

The student with disability passes through significant challenges in preparing for and transitioning to the college studies. However, through assistive technology, individuals with a disability have been able to get equal access to study resources. Similarly, the deaf and blind also are the students with immense challenges because they need to be provided with proper accommodation by the institutions. The blind can also be helped by using JAWS, Kurzweil education, and Braille to enhance theirEducation. Also, the deaf and hard-on-hearing students can use hearing aids, visual alert systems, and videophone to improve their learning capacity. Different higher institutions such as colleges and universities offer varying assistive technology for the blind and the hard-on hearing students. For instance, Stanford and Yale University are among the universities that middle-class and upper-middle-class students can attend. For example, Stanford University offers real-time translation technology to help the deaf and the low vision or blind during communication.

On the other hand, Yale University provides Text-to-speech and screen readers as assistive technology for the blind and the deaf. Student preparations play a critical role in making their education journey a walk in the park. The preparation comprises of both the parents and the students. However, more students do not have pre-college knowledge, experiences, and training concerning the assistive technologies, thus making it a challenge. They will wait until the institution decides on the appropriate technology and provides training on the use.

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