IMPACT OF INFORMATION TECHNOLOGY ON THE STUDY OF
STUDENTS WITH VISUAL IMPAIRMENT

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ABSTRACT

The assistive technology is actually viewed as an equalizer as it enables the user of Braille to offer the
instructors feedback as well as create Braille substances for themselves and in printed format for their
classmates, teachers, and parents. A number of options are provided to visually impaired pupils as
printed material or maybe produce written material. This implies that system both JAWS, keys that are
big, display and NVDA installed are actually a characteristic of assistive technology and additionally a
major tool for the visually impaired pupils. Furthermore, it's observed that a laptop having preferred
software boosts the cognitive and thinking ability of the pupils. To address the difficulties, the researcher
worked under strict deadlines and enlisted the assistance of teachers in assisting the students in filling out
the questionnaire. The researcher was required to produce a brailled scrp of the questionnaire so that the
students may reply to the questionnaire on their own time and in their own manner.

KEYWORDS: Technology, Teacher, Visually, Impaired, Student.

1. INTRODUCTION

To exclude the under privileged communities in the development policies as well as programs is
nonetheless a voice of matter in the developing nations, even in the 20 first century. The differences are
usually depending on their community, political & economic affiliations. Depravity with the actual
physical ability is grave in the latest days. The paradox is, there's a growing understanding and problem
towards the differently abled along with the absence of policies and energy in the identical sphere (Mamta
Rani. Et. al, 2021) Right now there are several resources readily available for the handicapped towns all
over the world. The nations are actually drafting programme and policies to deal with the requirements of
the differently abled communities. But the access as well as effect of the remedies aren't par with what
has been initially conceived as well as implemented (Dutta et. al, 2021). They don't attain the target towns
in the stipulated period. There's a gap which often is present in between the programme as well as the
target team. The communities of ours are usually behind to be accessible to the info as well as
implementation. Scholars point out different socio-economic and political factors which negatively
impact the interventions. Likewise, there are actually large resources readily available for the visually
impaired pupils in the higher education campuses and in the society. The technological innovations are
actually obtainable on the market which eases down the learning behaviour of the visually impaired
pupils (Shiv Kumar.et. al, 2019). The scenario gives hope as well as way for the visually impaired pupils
to achieve greater level of learning (Shukla, 2018). The issue is the unawareness, Modern technologies are
actually innovative and also have the ability of changing or perhaps adapting the classes which has unique

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need for teach. The above-mentioned technology helps instructors with physical or cognitive disability to instruct pupils (Asthana. Et. al, 2018) These sorts of contemporary technologies provide teacher’s revolutionary steps to help pupils that require special interest and assist them surpass the disability of theirs which hindered the process of theirs of learning. As per the American Foundation of Blind (2012), the assistive technology is actually a device which aids easy, independent, and quick learning by pupils that have actual physical disability. Exact same description has been laid by Colleagues and Jonassen that discovered that the assistive technology is actually a system of item that's been created to alter, improve as well as enhance the ability of a kids or maybe a pupil with particular requirements (Abhiram et. al, 2020). The sort of technology which endows pupils with visual disability require speech access, print access, Braille access as well as access to scanned material. The assistive technology is actually viewed as an equalizer as it enables the user of Braille to offer the instructors feedback as well as create Braille substances for themselves and in printed format for their classmates, teachers, and parents (Yadav et. al, 2021). A number of options are provided to visually impaired pupils as printed material or maybe produce written material (Devi (2021). This implies that system both JAWS, keys that are big, display and NVDA installed are actually a characteristic of assistive technology and additionally a major tool for the visually impaired pupils (Deepshikha, 2018). Furthermore, it's observed that a laptop having preferred software boosts the cognitive and thinking ability of the pupils. An affirmation by Jackson implies that in the planet of education generalization, globalization and inclusion, both the pupil as well as the teachers call for specific info on how’s technology capable of boosting the performance, improves informative income and increase involvement in other things. Attaining training for the visually impaired pupil revolves around the whole growth whether it is physical, private or perhaps academicals Sanjay Pal (2021). The main goal is usually to bridge the gap amidst the capability as well as inability, therefore turning training as the output of examination. Pupil having disabilities also can attain employment including the other pupils and secure complete training and good grades in case the parents as well as teachers strive for assistive technology

II. LITERATURE REVIEW

Khan, Akif&Khusro, Shah. (2021) Blind people are confronting a selection of issues in performing activities of everyday life like reading labels on an item, identification of currency notes, exploring unfamiliar spaces, determining the look of an item of interest, interacting with digital artifacts, operating a smartphone's user interface, selecting non-visual products on a screen, etc. The growth of smartphone based assistive technologies promotes independence, simplicity of use, and usability ensuing in enhanced quality of life but still poses assorted difficult possibilities. We've reviewed research avenues in smartphone based assistive technologies for people that are blind, highlighted the demand for technological advances, accessibility inclusive interface paradigm, and cooperation between health specialists, computer professionals, usability professionals, and domain subscribers to understand the possibility of ICT based interventions for blind individuals. This particular paper analyzes an extensive review of the problems as well as challenges for visually impaired as well as individuals that are blind with the goal to spotlight the advantages as well as limits of present technologies and strategies. Upcoming study ventures can also be highlighted as a contribution to the industry.

Kamaghe et al., (2020) in the previous years, the planet has encountered significant changes in the improvement of learning technologies that has enabled learners to participate in their learning tasks
anywhere. The penetration of cell phone online users in Tanzania has been increasing by two million in 2011 to 23mil in 2017. The adoption of mobile based learning (M learning) for pupils that are visually impaired in Tanzania has turned into a significant bottleneck since the majority of the e learning contents think that learners have sight and hence feature a great deal of visualizations. This causes visually impaired pupils in higher learning Institutions (HLIs) to deal with difficulties such as for instance specialized knowledge spaces. Lack of inaccessibility as well as skills of internet contents, which in turn lead to drop out of the faculty. The goal of this particular study is actually determining the consciousness as well as use amounts of present movable assistive technologies for visual impairment, and also the remaining difficulties that visually impaired pupil’s face, when working with these kinds of resources on smartphones to use m learning content from HLIs. In Tanzania. The study was done a contextual and observational inquiry learn at 3 leading HLIs. We discovered that sixty-seven % of respondents didn’t have knowledge of m learning assistive technologies, and the technology barriers of theirs for visually impaired pupils. Additionally, expertise, accessibility of Assistive technology plus affordability is able to impede the adoption of m learning in Higher Learning Institutions.

**Manjari et al., (2020)** One Sixth of the world public is actually suffering from vision impairment, as per who is report. In the previous years, numerous work are completed in developing a number of products to offer help to visually oblivious & improve the quality of the life of theirs by making them able. A lot of those products are sometimes costly or heavy for common uses. With this paper, a comprehensive comparative analysis of most of the appropriate gadgets created for these people has been offered that are handheld and wearable. The concentration was on the prominent characteristics of those devices as well as examination has additionally been carried out based on not many aspects as power use, weight, user-friendliness and economic. The concept was building a route for the researchers that wish to operate in this particular area by either creating a portable unit or perhaps through a few effective algorithms to make sure safety, mobility, and independence for visually impaired persons.

**Alabi, Mutula et al (2020)** The goal of this particular paper is actually determining the state-of-the-art assistive technologies (ATs) created for individuals living with visual disability and people who are actually utilized in academic libraries all over the world as a method of proffering resolution to the problems experienced by visually impaired pupils in accessing info. The information used for that paper had been produced from site of businesses that specialize in ATs for individuals living with disability as well as the library site of the top fourteen universities on the planet depending on the 2020 QS world ranking of colleges. This study discovered that foremost academic libraries in the USA and also the UK have integrated different ATs in library services as info access mechanism for pupils living with visual impairment. The study discovered that the most often used screen reader program is actually the Job Access with Speech (JAWS). The study even discovered that one of the institutions has a mission statement on the site of theirs, plainly stating assistance for individuals living with disability. This study was done using just the 2020 QS world ranking of colleges. It will be good to see results of academic libraries from Africa based on the rank of theirs. The paper gives spotlights on trends that could inform academic libraries in the pursuit to offering ATs for pupils living with visual impairments. This particular newspaper might help academics libraries that are at the brink of decision making on use of ATs as info access mechanism to the visually impaired pupils. This paper is actually the first person to offer librarians with innovations & ideas on particular ATs utilized by top academic libraries on the planet.
Febriandi et al., (2020) Blindness is actually a broad term for the problem of an individual that suffers from a disorder or maybe obstacle in the sense of his of vision. In line with the amount of the disorder, people that are blind individuals are split into two: complete blind and people who still have the leftover perspective (Low Vision). As a consequence of the loss/reduction of the sensory feature of vision, the blind seekers maximize the additional sensory capabilities like touching, smell, and hearing. Consequently, we've an answer to produce a mobile B Help program which may assist the blind and helper communities to cope with and react to individuals that are blind. This particular smartphone is built with a GPS to track individuals that are oblivious by utilizing a smartphone user.

III. RESEARCH METHODOLOGY

The method of descriptive survey uses questions formulated by the researcher and also the implementation by the questionnaire will be used in the study. A sample of 225 boys and girls will be selected using random sampling technique from special schools, Junior colleges and universities. For this study, the approach of purposive sampling was suitable since it selects a small sample of kids who have comparable features and uses them to represent the whole range of pupils with visual impairment. It was determined by the researcher that purposive sampling would be the most effective method for conducting in-depth examination of major concerns in assistive technology for the visually impaired. Analysis will be conducted by the numerical findings along with interpretation of the same using appropriate statistical tools. In order to examine the data, both quantitative and qualitative approaches were employed, with the assistance of Statistical Packages for the Social Sciences (SPSS).

IV. DATA ANALYSIS

4.1 Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>88</td>
</tr>
<tr>
<td>Female</td>
<td>137</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
</tr>
</tbody>
</table>

It can be seen from the above table that research is done with 88 male respondents and 137 female respondents.
4.2 Age

Table 2: Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 16</td>
<td>193</td>
</tr>
<tr>
<td>Above 16</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
</tr>
</tbody>
</table>

The exploratory data analysis indicates that the bulk (193) of learner responses were between the ages of 16 and 18, with just 32 of them being between 16 and 18. Based on the data above, it can be concluded that the respondents were under the age of sixteen (16 years). This can be ascribed to the fact that the student was tardy to school owing to a handicap. It's also worth noting that a significant percentage of them (32) are 16 years old or older. This can also be related to late enrollment in school, delayed development of developmental milestones, and the absence of some sensory organs, such as those involved in eyesight.
4.3 Do you agree that there is a need of assistive technologies to use a computer for the people with disabilities to improve employment prospects in the long term?

Table 3: there is a need of assistive technologies to use a computer for the people with disabilities to improve employment prospects in the long term

<table>
<thead>
<tr>
<th>Responses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>198</td>
</tr>
<tr>
<td>Agree</td>
<td>27</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>00</td>
</tr>
<tr>
<td>Disagree</td>
<td>00</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>00</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
</tr>
</tbody>
</table>

It can be interpreted from the above table that 198 respondents strongly agree to the statement “there is a need of assistive technologies to use a computer for the people with disabilities to improve employment prospects in the long term” while 27 respondents agree to it.
Figure 3: there is a need of assistive technologies to use a computer for the people with disabilities to improve employment prospects in the long term

4.4 Do you think that there is high practical use of assistive technology in secondary subject selection and passing through the schools?

Table 4: there is high practical subject selection and passing through the assistance of independent reading through use of assistive technology in secondary schools

<table>
<thead>
<tr>
<th>Responses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>213</td>
</tr>
<tr>
<td>Agree</td>
<td>12</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
</tr>
</tbody>
</table>
It is agreed by all the respondents that there is high practical subject selection and passing through the assistance of independent reading through use of assistive technology in secondary schools as 213 strongly agree to it while 12 agree to it.

Figure 4: there is high practical subject selection and passing through the assistance of independent reading through use of assistive technology in secondary schools

4.5 Are you satisfied with the current ICT infrastructure and Assistive Technology facilities available in the institution/library for you?

Table 5: Satisfaction with the current ICT infrastructure and Assistive Technology facilities available in the institution/library

<table>
<thead>
<tr>
<th></th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied</td>
<td>221</td>
</tr>
<tr>
<td>Satisfied</td>
<td>4</td>
</tr>
<tr>
<td>Neither</td>
<td>0</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>0</td>
</tr>
<tr>
<td>Very dissatisfied</td>
<td>0</td>
</tr>
</tbody>
</table>
It can be seen from the above table that 221 respondents are very much satisfied while 4 respondents are satisfied by the current ICT infrastructure and Assistive Technology facilities available in the institution/library.

![Bar chart showing satisfaction levels with current ICT infrastructure and Assistive Technology facilities available in the institution/library.]

Figure 5: Satisfaction with the current ICT infrastructure and Assistive Technology facilities available in the institution/library

V. CONCLUSION

The outcomes of the study demonstrate that a lack of suitable and acceptable computer knowledge and abilities presents a significant barrier to instructors in the acquisition and use of computers. The vast majority of instructors who answered the survey's questions said that most teachers lacked the necessary computer expertise and abilities to utilize the appropriate visually impaired applications or to instruct their students on how to use them. Therefore, because computers are situated in a computer laboratory rather than in classrooms, efficient use of computers as instruments or equipment of curriculum delivery in terms of teaching and learning is compromised. The outcomes of the study demonstrate that a lack of suitable and acceptable computer knowledge and abilities presents a significant barrier to instructors in the acquisition and use of computers.

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