Computer Literacy of Visually Challenged People

Dr. S. Karthiyayeni

*Principal, R.V Teachers College, Jayanagar, Bengaluru

Email: karthiyayeni.rvtc@rvei.edu.in

Shashi.N

** Research Scholar, R.V Teachers College, Jayanagar,Affiliated to Bengaluru City University

Bengaluru

ABSTRACT: This study aimed to assess the computer literacy of visually challenged individuals. Technological advancements are offering more affordable and effective solutions to support the inclusion of visually challenged individuals in educational, cultural, social, and workplace environments. Using a Google Forms survey, the study examined the computer literacy levels of visually impaired males and females, the devices they use, and the software they rely on. The results revealed that a significant number of visually challenged individuals utilize desktop and laptop computers for both professional and personal development. Data were analyzed using percentage-based statistical techniques. The study also highlighted the crucial role of support from family, friends, and institutions in providing the necessary devices and facilitating the acquisition of computer literacy skills. The findings suggest that improving computer literacy skills can lead to positive outcomes for the inclusion of visually impaired individuals into mainstream society.

Key words- Computer literacy, Visually Challenged People, Computer based tool used, Computer software used.

1. Introduction

Access to education is continually expanding across developing countries like India. The increasing number of students enrolling in higher education has significantly contributed to the country's development. Innovative programs, adult education initiatives, and Open University programs are transforming the lives of people with disabilities. Previously, Braille products were the primary means for visually challenged individuals to access information. However, computer literacy has opened new avenues for visually challenged people, providing solutions through new software and assistive technology. This advancement has brought renewed hope, allowing Visually

Challenged individuals to live more independently. The internet empowers them to complete tasks on their own that they otherwise could not have done without assistance. Computer literacy has had a profound impact on both the education and professional lives of visually challenged individuals. Understanding the role of computer literacy in these areas is also a key aim of this study.

Computer literacy enables Visually Challenged individuals to effectively use technology for accessing, processing, gathering, manipulating, and communicating information. It enhances basic skills in using social media and computer devices, making these tasks easier. This, in turn, boosts their learning abilities and encourages them to participate in social life, similar to non-disabled individuals. Computer literacy also empowers visually challenged people to become active contributors to economic, cultural, and social development. It facilitates the use of multimedia and computer devices for educational purposes and information access, often in the form of audio or audiovisual communication. The ICT learning environment creates a new pathway for Visually Challenged individuals to access information quickly and without barriers. Computer literacy has had a significant impact on the traditional education system for visually challenged students. Therefore, this study aims to explore whether Visually Challenged individuals possess sufficient computer literacy to utilize advanced technologies and whether these new electronic media services and devices are adequately reaching and assisting them.

The study explores the awareness of computer hardware devices and software programs that enable Visually Challenged individuals to use ICT for personal and professional development. Computer literacy creates opportunities, distinguishing between those who have access to information and those who do not, particularly within the direct method of the education system. It empowers visually challenged students to access more e-resources and work independently, surpassing what could be achieved through traditional methods. They can access information as long as the interfaces, resources, and services on the internet are designed in an accessible manner.

2. Objectives of the Study:

The primary goal of the study was to investigate the use of computer devices by Visually Challenged individuals. To achieve this, the following specific objectives were set:

1. To examine the types of computer devices used by visually challenged individuals.
2. To evaluate the use of computer programs/applications by visually challenged individuals.
3. **Research Design:**

The study was conducted among Visually Challenged individuals in Karnataka, with data collected using a Google Form. A total of 22 visually challenged participants provided their responses through the form. The researcher employed percentage computation as the statistical technique for data analysis.

4. Result and Discussion:

4.1 Computer literacy

Visually Challenged individuals require computer literacy to navigate digital platforms and use assistive technologies to access e-resources and information online. To assess their computer literacy, visually challenged individuals were asked to respond to questions via a Google form. The responses revealed that most Visually Challenged individuals use assistive technologies to access e-resources, facilitated by their computer literacy. This skill positively impacts their self-identity and boosts their self-confidence, enabling them to live independently in society. Therefore, computer literacy plays a crucial role in the professional and personal development of visually challenged individuals. Among the 22 participants, 10 (45.5%) females and 12 (54.5%) males reported having computer literacy.
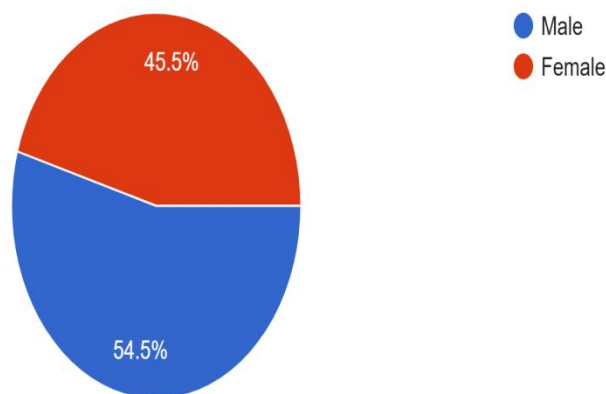
Table 4.1. Computer literacy among Visually Challenged individuals.

SL NO	Computer LIteracy	Responses (N=22) %
1	Male	12(54.5%)
2	Female	10(45.5%)

4.1 Graphical representation of computer literacy among Visually Challenged individuals.

Gender
22 responses

According to Graph 4.1, 10 (45.5%) females and 12 (54.5%) males demonstrated computer literacy. This suggests that the majority of visually challenged individuals are aware of computer devices and use them effectively.

4.2 Methods of learning /operating computer:

Visually Challenged individuals require specialized training and support to develop computer literacy. They often rely on assistance from family, friends, teachers, peers, and colleagues. Institutions also offer suitable assistive technologies to help Visually Challenged people. A survey conducted through Google Forms gathered responses regarding how these individuals learn computer skills, with the results summarized in Table 1.1. Among the 22 participants, it was found that 9 individuals (40.9%) learned computer skills independently, while 8 individuals (36.4%) acquired the skills through short-term training courses. No participants (0%) learned computer skills with the help of peers or colleagues, and 5 individuals (22.7%) received assistance from family and friends. The data from this survey suggests that learning independently and attending short-term training courses are the most effective methods for acquiring computer skills.

Table 4.2 Methods of learning /operating computer

SL NO	Methods of learning computer	Responses (N=22) %
1	Learned myself	9(40.9%)
2	Attending short term training	8(36.4%)
3	Peer and colleagues helped me	00(00%)
4	with the help of family and friends	5(22.7%)

4.2. Graphical representation of Methods for learning /operating computer

1. Methods of learning computer / Mobile operating

22 responses
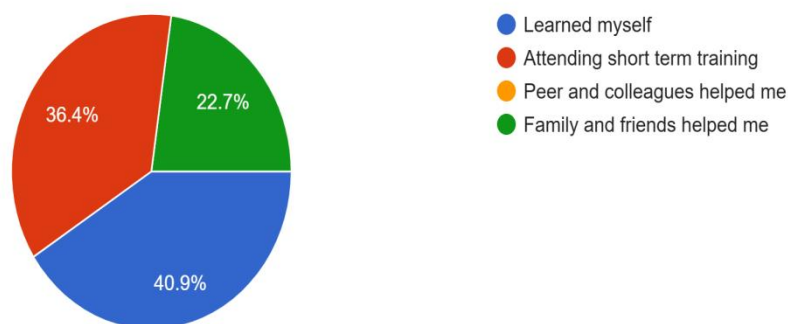
Graph 4.2 shows that out of 22 visually challenged individuals, a significant number, 9 (40.9%), learned computer skills independently. As a result, they are able to use ICT tools for their professional and personal development, just like individuals without disabilities.
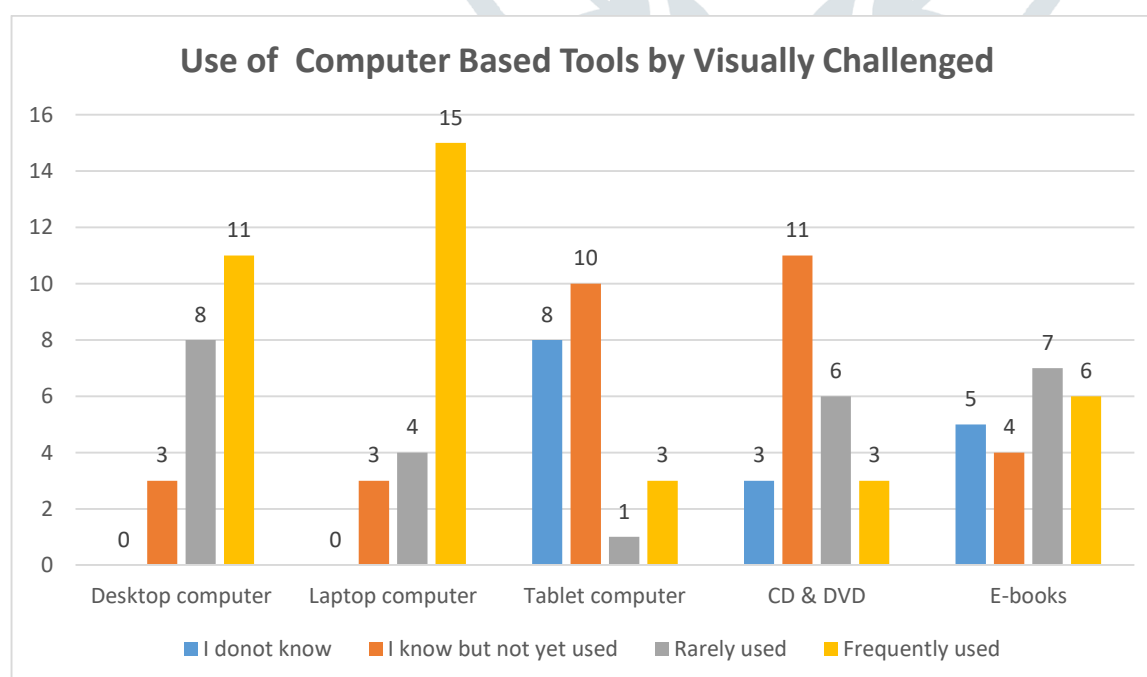
4.3 Use of Computer Based Tools:

Computer literacy plays a significant role in the lifelong learning of visually challenged learners. Significant advancements in assistive technologies, such as screen readers (NVDA & JAWS), handheld magnification software, and accessible websites, offer visually challenged learners many opportunities to access information at their fingertips. Visually challenged learners were asked to provide responses regarding the computer-based tools they use.

Table 4.3 outlines the computer-based tools used by visually challenged learners,. The data shows that out of 22 visually challenged learners, 11 (50%) used desktop computers, and 15 (68.2%) used laptops. Additionally, there were no responses indicating unfamiliarity with these tools. This suggests that visually challenged learners, are aware of computer-based tools, and the majority of them actively use them.

Table 4.3 Use of Computer Based Tools

SL NO	Computer Based Tools	I do not know	I know but not yet used	Rarely used	Frequently used
1	Desktop computer	00%	3 (13.6%)	8 (36%)	11(50%)
2	Laptop computer	00%	3 (13.6%)	4 (18.2%)	15(68.2%)
3	Tablet computer	8(36.4%)	10 (45.5%)	1(4.5%)	3 (13.6%)
4	CD & DVD	3 (13.6%)	11(50%)	6 (27.3%)	3 (9.1%)
5	E-books	5 (22.7%)	4 (18.2%)	7 (31.8%)	6 (27.3%)

4.3. Graphical representation of Use of Computer Based Tools

Graph 4.3 indicates that visually challenged learners are aware of computer-based tools, with most of them actively using these tools for their personal and professional development.

4.4: Use of Computer Software:

Computer literacy serves as a catalyst for the economic and social development of a nation. However, due to the digital divide, the benefits of e-resources and learning opportunities are distributed unequally, particularly between disabled and non-disabled individuals. Computer literacy can be effectively used to impart knowledge to visually challenged students.

Visually challenged individuals were asked to indicate whether they use computer software such as MS Word, MS Excel, and MS PowerPoint. A significant number of students reported using all three software programs.

Table 4.4 outlines the usage of software by visually challenged individuals:

- MS Word was used by 21 (95.5%) and not used by 1 (4.5%).
- MS Excel was used by 19 (86.4%) and not used by 3 (13.6%).
- MS PowerPoint was used by 17 (77.3%) and not used by 5 (22.7%).

These results indicate that visually challenged individuals possess adequate computer literacy to use software like MS Word, MS Excel, and MS PowerPoint.

Table 4.4. **Use of Computer Software**

SL NO	**Soft wares**	Used	Not Used
1	M.S word	21 (95.5%)	1(4.5%)
2	M.S Excel	19 (86.4%)	3 (13.6%)
3	M.S. Power point	17 (77.3%)	5 (22.7%)

4.4. Graphical representation of Use of Computer Soft wares
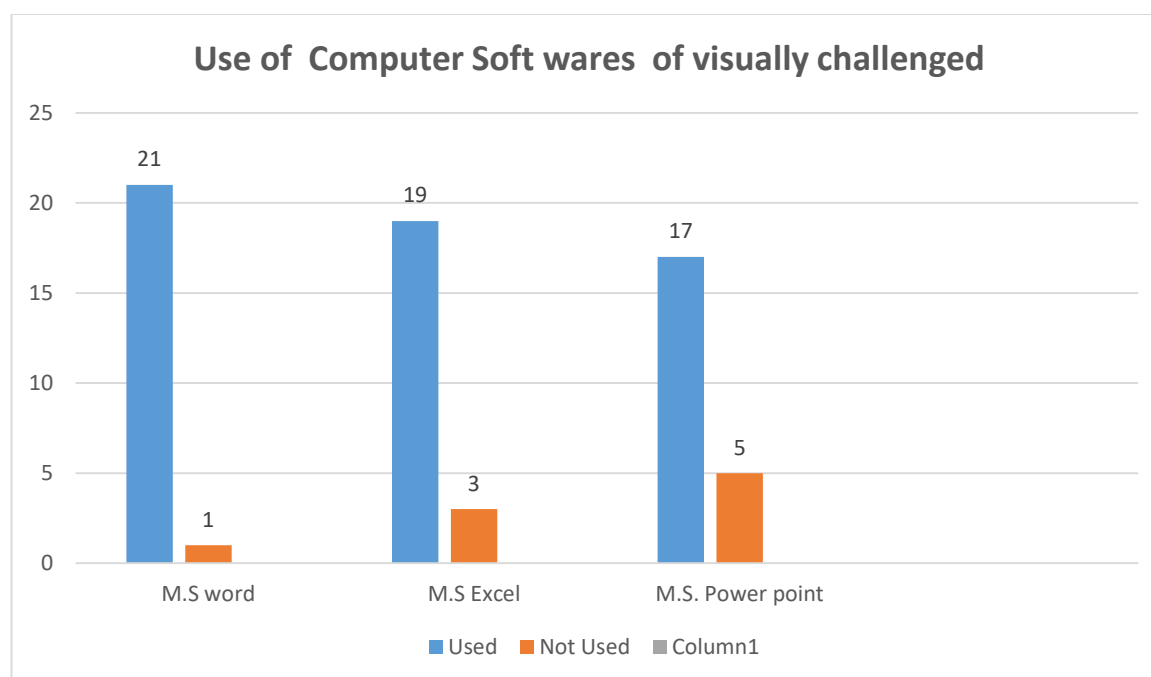
Graph 4.4 showed that visually challenged individuals effectively utilized software such as MS Word, MS Excel, and MS PowerPoint for their academic and professional development, as similar to non-disable people.

Conclusion:

The study reveals that a large majority of visually impaired learners are computer literate. However, they are often deprived of fully benefiting from ICT resources in study centers and workplaces. Out of 22 visually challenged individuals, many work in government sectors as SDA, FDA, and Sheristedar in courts, while others are employed in both government and private sectors as documentarists, teachers, and more. The responses from these individuals indicate that they are capable of using computer tools and possess adequate computer literacy. However, they require some support, such as slight modifications to devices and the assistance of assistive technology, to use computers effectively. Moreover, institutions, and family members need to provide computer-based tools to enable these individuals to enhance their self-efficacy in both their professional and personal lives.

The findings also suggest that visually impaired individuals are fully capable of using computers. Their ability to do so depends on the environment and the availability of suitable tools. They can use computers for professional work and information access, provided the tools are sufficiently modified to assist them. To empower them further, visually challenged individuals should receive adequate training programs and support from family members and friends. These individuals are eager to utilize computer-based tools to overcome their disabilities, and there is no doubt about their potential to succeed in this regard.

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