USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN HIGHER EDUCATION FOR THE VISUALLY IMPAIRED STUDENTS

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Abstract: *Every aspect of our culture is influenced by technology today. In the field of education, ICT has begun to have a presence but the impact has not been as extensive as in other fields. In education, the use of ICT lends itself to more student-centered learning settings and often this student-centered learning setting in the absence of traditional classroom teacher creates some tensions for few teachers and students. In this study an attempt is made to find the level of awareness of the usage of ICT of the visually impaired students in higher education. The study was conducted on the visually impaired students of Guwahati (Assam). The sample of the study consisted of 100 students. The technique of simple random sampling was used for selecting the sample. Self-developed questionnaire was used for collecting the data. Focused group discussion was used for finding out the student's knowledge and skill towards the use of ICT. The result shows that the students are using ICT if the facility is available to them. Several suggestions have been made to enhance the usage of ICT in learning process in college.*

Keywords: *Information and Communication Technology (ICT), Special Education, Level of Awareness, Assistive Technology (AT).*

1. INTRODUCTION:

In simple terms, the word Information and Communication technology (ICT) means any product or system that allows communication, storage and processing of information. In the words of Hanna (2003), ICT is defined as" Technologies that facilitate communication and the capture, processing and transmission of information by electronic mean". For development purpose, Information and communication is defined as "any communication device encompassing radio, television, cellular phone, computer, satellite systems and so on, as well as various services and applications associated with them such as video conferencing and distance learning.

In today's world, the use of Information and communication Technologies have become common place entities in all aspects of life. Over a decade or two, the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within business and governance. In the present scenario, technology plays an important role in our day to day life. In the field of education, ICT has begun to have a presence but the impact has not been as extensive as in other fields. Teaching-learning process is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. However, the usage of Information and Communication Technology in education, lends itself to more student-centered learning settings and often this creates some tensions for some teachers and students. Since the world is digitalizing rapidly, the role of ICT in education has become more and more important and this importance will continue to grow and develop in the 21st century (Ron Oliver, 2002).The world is being changed and shaped significantly by technological developments. The use of technology is more among students from Engineering and business especially for spreadsheet and graphics editing and males are more likely to spend more extreme amounts of time online. Judith Borreson (2007) said 70% of students said that Information Technology helps them to do research.

1.1 The use of Information and Communication Technology in Special Education:

The quality of life of the disabled can be improved by the use of information and communication technology since it accelerates great opportunities and is an effective tool allowing a greater number of people to play a part in society. With the help of proper training in ICT, the disabled persons can be assisted to prepare and obtain employment or self-employment as well as to develop the skills necessary to maintain the new employment.

The persons with disabilities have difficulty to participate fully in school, work and community and in this respect technology can be a great equalizer for such individuals. This is most evident in the case of persons with mobility, hearing or vision impairments but is also true for individuals with limitations in cognition and perception. Technology can help a person who is unable to speak to communicate with spoken language. With the use of a portable voice synthesizer, a student can ask and respond to questions in the regular classroom, overcoming a physical obstacle that

may have forced placement in a special segregated classroom or required a full time instructional aid or interpreter to provide "a voice".

1.2 Assistive Technology:

The specially abled students get great help in the field of education with assistive technology. A number of different types of assistive technology are available that can be useful for students with a wide spectrum of disabilities-from a learning disability to severe physical impairments. The following are the ways in which assistive technology can help the students:

a) Communicating: There are students who are nonverbal or who have a hard time talking, these students there are ways to help them communicate with their teachers and their peers. There are different tools such as communication boards, communication enhancement software and voiced word processing, which can be used.
b) Listening: Students with hearing impairments are not able to process information by listening. Assistive technology such as close captioning, hearing aids and personal FM units in which the teacher wears a transmitter and the student wears a receiver can be used for students with auditory disabilities.
c) Visual Aids: Students who are visually impaired may need to use large-type books, high contrast materials, screen readers and screen enlargers.
d) Working on a Computer: Today's scenario, even the youngest of school children use computers to help them learn. Computer is a great tool for learning specially for students with disabilities. There is different software which gives the students the ability to write, spell and read. The students with special needs can download the reading material that is being used in the classroom. There are also mounting systems so that a computer can be mounted on a wheel chair for easier accessibility.
e) Mobility: In the schools, the students have to move around a lot. Students go down hallways and to different room all day long. The students with physical disabilities, wheelchairs and self-propelled walkers are types of assistive technology that helps them get around.
f) Performing Tasks: Students with physical impairments perform certain tasks with the help of Assisted Technology called capability switches. Any of such tasks may include being able to use a battery operated scissors with the push of button. These special switches or buttons can also be used to operate a computer, play with adapted toys or activate an adapted device. There are switches that operate by eye blinks, muscle twitches and puffing air, if the student is unable to push the button.

2. STATEMENT OF THE PROBLEM:

The study focuses to identify the level of awareness about the usage of ICT among the visually impaired students in their college education.

3. RESEARCH OBJECTIVES: The objectives of the study are:

1) To find the level of awareness of usage of ICT devices such as TV, Computer and mobile among the visually impaired students.
2) To find out the level of awareness of the usage of visual aids such as large-type books, high contrast materials, screen readers and screen enlargers amongst the visually impaired students.
3) To find the difference in the awareness level of usage of ICT among the visually impaired male and female students
4) To suggest measures on the basis of the findings to improve the usage of ICT amongst the visually impaired

4. DELIMITATION:

1) The present study is restricted to the colleges of Guwahati (Assam).
2) Students studying in graduate and post graduate level included in the sample.

5. METHODOLOGY:

Survey method was employed to collect the data. A survey is a research method in which subjects respond to a series of statements or questions in a questionnaire or an interview. Surveys target some population, which are the people who are the focus of research. Because populations are usually quite large, the researcher will target a sample, which is a part of a population that represents the whole. The most common types of surveys are questionnaires and interviews. A questionnaire is series of written statements or questions. With an interview, the researcher personally asks subjects a series of questions and gives participants the freedom to respond as they wish. Both questionnaires and interviews can include open-ended questions (allowing the subjects to respond freely), or close-ended questions (including a selection of fixed responses). The population of the present study consists of secondary school students.

Population-

The population of the investigation is representing the visually impaired college students studying in graduate and post graduate level in the state of Assam.

Sample:

Sampling is a process used in statistical analysis in which a predetermined number of observations are taken from a larger population. The technique of simple random sampling was used to select the students and collect the data from them. Simple random sampling is the basic sampling technique where we select a group of subjects (a sample) for study from a larger group (a population). Each individual is chosen entirely by chance and each member of the population has an equal chance of being included in the sample. A total of 100 samples were selected randomly from the graduates and post graduates visually impaired students of five colleges of Guwahati for the survey.

Procedure:

The samples of 100 students were selected by way of simple random sampling by giving equal weightage to visually impaired boys and girls of graduate and post-graduate level. The statistical technique used is percentage analysis of the responses from the sample. For collecting the data, the investigators visited the different schools with questionnaire and with the permissions of the school authority administered the test to the students.

Focus group discussion and interviews were also conducted. For the focused group discussion the students were divided into groups. Each group comprised of eight visually impaired students where equal weight age was given to the boys and girls. A set of questions were asked by the moderator to elicit responses from each group within the time frame of 90 minutes.

The students were interviewed asking questions related to the usage of ICT , where all interviewees were asked the questions based on their respective disabilities.

6. ANALYSIS AND INTERPRETATION OF DATA:

The study highlighted the level of awareness of the usage of ICT amongst the visually impaired students:

- It was found that 82% of the visually impaired students had awareness of ICT devices such as TV, Computer and mobile. However only 53% students actually use them for education and daily use without the help of others.
- The percentage analysis of the respondents revealed that 70% of the visually impaired students use visual aids such as large-type books, high contrast materials, screen readers and screen enlargers for their educationally purposes whereas other students manage with the support of some helpers.
- The study revealed that there is a difference in the awareness level of ICT usage amongst visually impaired boys and girls. The results of analysis reveal that boys were more aware about the usage of ICT and they use it more often than girls. It was found that 70% visually impaired male students use ICT without ant help in education and day –today activities. Whereas 58% female visually impaired students use ICT without any help.

7. DISCUSSIONS, SUMMARY AND SUGGESTIONS:

The research finding shows that students acceptance towards ICT usage in learning process is at a moderate level. The student's level can be improved by providing the ICT devices to the students in their respective college. The student's level can be improved by providing the ICT devices to the students in their respective colleges. Because the mobility is difficult in the case of visually impaired students, the students are unable to go too far places for the learning process through ICT. The awareness level is very much low for the female students when compared with the male students. The following suggestions are made in order to improve the level of awareness of visually impaired students towards the usage of ICT:

- The ICT facility should be made available to the students in their college.
- The college should have all the ICT devices for the students according to their needs.
- The college should have a separate lab for the students.
- The lab must have an instructor who is been specially trained in this field. He must know to use all ICT devices available in the lab and he must be able to teach the students about the usage of ICT devices.
- The examination for the students should be conducted with the help of ICT devices so that students need not depend on anybody as well as they can express their own ideas.
- Most of the visually impaired students are staying in the hostel near their colleges or in the college itself. So if ICT facility is available to them in their hostel, it is better for the students to use the facility to full extent.

8. CONCLUSION:

It is concluded that the awareness level of the visually impaired students towards the usage of ICT is still can be improvise. Although the level of awareness is at the moderate level, the education level of the students is still worried. Only few students are coming forward to use the ICT devices. Many students should use the technology so that they can improve their level in the society. The awareness level of the female students should be improved. The ICT facility should be made available in the college and in the hostel, so that each and every student can increase their level of awareness towards the usage of ICT.

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