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INFORMATION AND COMMUNICATION TECHNOLOGY FOR THE STUDENTS WITH SPECIAL NEEDS IN THE INCLUSIVE SET UP IN KANNUR

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ABSTRACT

Inclusive Education is in view of the fact that children with disabilities form one of the largest groups that are still outside the fold of the general education system. The scheme provides an opportunity for children with disabilities, who have completed eight years of elementary education to continue their education in regular schools at secondary level in the inclusive environment. In contrast to the situation in inclusive classrooms, ICT has become a tool and essential element of teaching and learning. Most of the recent studies indicate that ICT helps for the improvement of learning. This paper also argues that it viz., ICT tools (Assistive tools) have an essential role for enhancing the learning outcomes among the students with special needs. The use of Information and Communication Technology can help and create an inclusive environment. But the present study indicates that more percentage of government schools are not using these kind of ICT tools for students with special needs. Only very few number of government schools are using these tools for the easy learning of students with special needs. The main objective of this study was to find out the percentage of schools using Information and Communication Technology tools for the students with special needs in the inclusive set up in Kannur district. Considering the time limit of the study, half of the population i.e., 44 schools have been selected as sample of the study. The study mainly focussed on the role and influence of ICT in the curriculum development and learning. It provides a real opportunity for teachers of all phases and subjects to rethink fundamental pedagogical issues alongside the approaches to learning that pupils need to apply in classrooms. The skills of all children can be developed by the effective integration of ICT in schooling, so that children can master a wide range of technologies. So each and every school can implement the ICT facilities for children. It will help improve their learning and cognitive strategies.

INTRODUCTION

Inclusive Education is in view of the fact that children with disabilities form one of the largest groups that are still outside the fold of the general education system. The scheme provides an opportunity for children with disabilities, who have completed eight years of elementary education to

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continue their education in regular schools at the secondary level in an inclusive environment. Inclusive set up is an approach towards educating the students with and without disability under the same roof. This is possible only in a flexible education system that assimilates the needs of diverse range of learners and adapts itself to meet these needs. Technology has great potential in providing access for all learners, and the ability to access the general education curriculum. Assistive technology is a generic term that includes assistive, adaptive, and rehabilitative devices for individuals with disabilities. An effective computer-based word-processing system can enhance classroom academic outcomes. Word Processing is an assistive technology tool that can be made use of for enhancing academic outcomes of students with writing disabilities in the general classroom **(Hetzroni & Shrieber, 2004)**. Thus ICT tools and resources may have a great potential to foster and actualize inclusive practices in schools and teachers play a fundamental role in capitalizing the opportunities offered by the new technologies to support the full inclusion of all students in mainstream education systems **(Ott et al., 2007)**. Essential technology skills for pre-service teachers and strategies that support inclusive educational practice and enhanced technology, pedagogy, and content knowledge (TPACK) model with assistive technology as a means can promote inclusive educational practice for pre-service teachers **(Beecher et al., 2008)**. ICT thus can improve the education of students with learning disabilities (LD). ICT certainly offers students the capacity to construct their own learning experiences, and many investigations suggest that this applies also to students with Learning Difficulties **(Adam & Tatnall, 2008)**. Effective use of assistive technologies (AT) can help governments in developing countries achieve inclusive education by helping children with disabilities in schools. Effective use of assistive technologies (AT) can help governments in developing countries to achieve inclusive education by helping children with disabilities in schools **(Gronlun et al., 2010)**. Inclusive educational technology fosters inclusive

education and improves the quality of life by increasing participation and reducing social exclusion. Educational technology is a collection of research approaches to improve education aiming at effective use of technological tools to facilitate learning processes **(Bucksch & Hamburg, 2015)**.

OBJECTIVE

To find out the percentage of schools using Information and Communication Technology tools for the students with special needs in the inclusive set up.

METHODOLOGY IN BRIEF

METHOD

For this research, exploratory and descriptive study was carried out through a check list survey on Information and Communication Technology for the students with special needs in the inclusive set up in Kannur.

SAMPLE

There are 89 Government schools in Kannur district, which constitute the population for the study. Considering the time limit of the study, half of the population i.e., 44 schools have been selected as sample of the study.

TOOL USED

In order to realise the objective of the study, the investigators developed two checklists. The checklists consist of listing of schools using Information and Communication Technology tools for the students with special needs in the inclusive set up. The investigator has gone through inclusive education books, magazines, research journals and discussion with resource teachers for preparing the checklists. The investigator personally visited the Government secondary schools in Kannur district with the permission of the concerned heads of the institutions. The investigator sent a letter mentioning the purpose of research to the heads of the institutions

and seeking their co-operation in the administration of the checklist.

The Analysis of Percentage is used as the statistical technique.

RESULTS AND DISCUSSION

The table-1 shows that, analysis of percentage ICT tools (Assistive tools) in schools for the students with special needs in the inclusive set up and analysis of percentage of available facilities to support ICT for the students with special needs in the inclusive set up and the number of schools selected for study.

TABLE 1

ANALYSIS OF THE PERCENTAGE OF SCHOOLS USING ICT TOOLS (ASSISTIVE TOOLS) FOR THE STUDENTS WITH SPECIAL NEEDS IN THE INCLUSIVE SET UP

(ICT TOOLS (ASSISTIVE TOOLS) FOR SWSN NOT PROVIDED IN THE INCLUSIVE SCHOOLS)

SL.NO	ICT TOOLS (ASSISTIVE TOOLS) FOR SWSN NOT PROVIDED IN THE INCLUSIVE SCHOOLS (N=44)	PERCENTAGE OF ICT TOOLS FOR SWSN NOT PROVIDED IN INCLUSIVE SCHOOLS
1	Text phones	0%
2	Braille printer	0%
3	Voice recognition	0%
4	On screen boards	0%
5	Touch screen	0%
6	Scanning input	0%
7	Braille note taker	0%
8	Anti- glare screen	0%
9	Speech recognition system	0%
10	Variable speech recorder	0%
11	Electronic maths sheet	0%
12	Basic adaptive Key boards	0%
13	Alternative keyboards	0%
14	Electronic maths work sheet	0%
15	Proof reading programme	0%
16	Computer screen magnification	0%
17	computerized speech recognition	0%
18	Portable word processor	0%
19	OBR (optical braille reader) software	0%
20	Braille key label assisting with key boards	0%
21	Abbreviation expansion and word prediction software	0%
22	Closed-Circuit Television Magnification (CCTV)	0%
23	Large print display alternative colures on computer screen and voice input	0%

The above table-1 showed that the percentage of schools not using these ICT tools (0%). In many studies conducted abroad indicated that the above tools are used in schools for educating the students with special needs in inclusive set up. Hence the result from the table-1 indicates that the many schools are not providing these kinds of ICT tools (Assistive tools) for students with special needs in inclusive set up.

TABLE 2

LESS THAN 10 PERCENT OF INCLUSIVE SCHOOLS USING ICT TOOLS(ASSISTIVE TOOLS) FOR SWSN

SL.NO	ICT TOOLS (ASSISTIVE TOOLS) FOR SWSN	PERCENTAGE LESS THAN 10% OF INCLUSIVE SCHOOLS (N=44) (%)
1	Talking spell checkers	6.8
2	e-speaker	6.8
3	electronic dictionaries	4.5
4	adapted computers	2.3

It can be inferred from the above table-2 that only 6.8 % schools are using talking spell checker and ubuntu software. 4.5 % of schools are providing the electronic dictionaries. Only 2.3 % of schools are using adapted computer. Out of 44 government schools only one school provides the ICT tools like adapted computer.

TABLE 3

PERCENTAGE (10 %-49%) OF INCLUSIVE SCHOOLS USING ICT TOOLS (ASSISTIVE TOOLS) FOR SWSN

SL.NO	ICT TOOLS (ASSISTIVE TOOLS) FOR SWSN	PERCENTAGE (10%-49%) OF INCLUSIVE SCHOOLS (N=44) (%)
1	Screen reader	18.2
2	Talking calculator	15.9
3	JAWS(Jobs Access with Speech) text-to-speech software	13.6
4	Ubuntu	13.6

It is inferred from the above table - 3 that the percentage of schools using assistive tools in schools for students with special needs in inclusive set up is between 10 to 49 percentage .18.2% of schools are using screen reader.15.9% of schools are using talking calculator. And 13.6% of schools are using JAWS (Job Access with Speech) text-to-speech software and Ubuntu software.

TABLE 4

MORE THAN 50% OF INCLUSIVE SCHOOLS USING ICT TOOLS (ASSISTIVE TOOLS) FOR SWSN

SL.NO	ICT TOOLS(ASSISTIVE TOOLS) FOR SWSN	PERCENTAGE MORE THAN 50% OF INCLUSIVE SCHOOLS
1	Audio materials like talking books and audio cassettes of recorded lessons or Audio books	50

It is inferred from the above table - 4 that the percentage of schools using assistive tools in schools for students with special needs in inclusive set up is greater than 50 percentages. About 50 of schools are using the audio materials like talking books and audio cassettes of recorded lessons audio books as a ICT tool for students with special needs in inclusive set up.

FINDINGS

The major findings of the present study show that the percentage of ICT Tools (Assistive Tools) in government schools for the students with special needs is very poor in the inclusive set up. The study indicates that many government schools have not provided the tools like Basic adaptive Key boards, Alternative keyboards, Voice recognition, On screen boards, Touch screen, Scanning input, Speech recognition system, Abbreviation expansion and word prediction software, Anti- glare screen, Braille key label assisting key boards, OBR (optical braille reader) software, Braille note taker, Braille printer, Variable speech recorder, Closed-Circuit Television Magnification (CCTV),Computer screen magnification, Text phones, Electronic math sheet, Large print display alternative colours on computer screen and voice input, Electronic maths work sheet, Proof reading programme ,Portable word processor etc. That means that the government should actively focus on the ICT integration in general classroom for SWSN in all schools for their educational and skill development.

Yet another findings from the present study indicates that less than 10 percent of government schools are using the following tools like electronic dictionaries (6.8%), adapted computers (4.5%),Ubuntu software (2.3%),Talking spell checkers (2.3%), and e-speaker (2.3%). Out of 44 schools only one school is having adapted computer and which is not in working condition. From 10 – 49 % of government schools are using the following tools like Screen reader (18.2%), Talking calculator (15.9%), JAWS (Jobs Access with Speech) text-to-speech software (13.6%).

JAWS and screen reader and text-to-speech software which can help the user in adjusting the volume, pitch and speed of reading, and in choosing or adjusting to a male or female voice according to their preference. These softwares are more used by the blind students. The majority of the schools are now using JAWS for SWSN in inclusive class rooms. The screen reader can update in mobile phones, laptops, computers and tabs. Using the screen reader blind students can read the computer text passages, pdf files, analyze the phonetic structure of words and attempt re-constructing words by putting together astring of synthetic phonemes, ensuring easy understandability of the message by the student. Another findings from the study indicaties that 50% of government schools are using Audio materials like talking books and audio cassettes of recorded lessons or Audio books. The major findings is that out of 44 schools the 22 schools are using the audio books and talking books. The audio books are available in the forms of CD, DVD and cassettes. The recording machines can be used to record lectures, books and other study materials and help SWSN. The audio books are provided by the state government. These audio materials are distributed by DIET in the schools of Kannur district. The electronic devices like mobile phones and tablet are also used for recording lessons and lectures. In many schools the resource teachers are depending upon the mobile phones for teaching SWSN because it is very much helpful to visualize the videos (hearing impaired students) audios, play music and poems.

EDUCATIONAL IMPLICATONS AND SUGGESTIONS

The study has following educational implications.

1. It is very important that there should be proper financial support and funding from the side of the Government for the integration of ICT tools or assistive tools for the students with special needs in inclusive classrooms.

2. The ICT tools or assistive technology is a powerful tool for improving access to education and to increase achievement among students with special needs. Hence provide ICT tools in all government schools.

3. Students must be trained in the proper use of the assistive technology device to maximize their educational attainments by decreasing their difficulties.

4. Government should offer the new assistive tools and technology related facilities in schools for increasing the opportunities to exchange knowledge and information and better communication for school administration, resource teachers and students with special needs.

5. It is essential to conduct periodical workshops and seminars based on the objectives of Inclusive Education supported by Assistive Technologies within the overarching framework of Education For All (EFA) as defined in SSA and NCF 2005.

6. Need to conduct in-service and pre-service programs for resource teachers as well as regular teachers for the successful integration of ICT tools in inclusive classrooms.

7. It is important to give appropriate teacher training and support for teachers in the field of Information and Communication Technology.

CONCLUSION

It is necessary that ICT tools (Assistive tools) have an essential role for increasing the learning outcomes among the students with special needs. The use of Information and Communication Technology can help create inclusive environments. But this study indicates that more percentage of government schools are not using the ICT tools for students with special needs. Only very few number of government schools are using these tools for the benefit of students with special needs. High percentage of government schools lack these appropriate assistive tools. Only very few ICT tools are provided by the government and majority of the tools are bought by themselves. Another problem is due to insufficient funding. Majority of these tools are very costly and the students are mostly from poor families and not able to buy these tools. So very few students are using these kinds of tools. So it adversely affects the overall learning outcome of the students with special needs in inclusive set up.

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