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Vol-40-Issue-50-March -2020

Assistive Technology Facilities for the Students with Intellectual Disability in the Buds Special Schools in Kannur District of Kerala

Anjali Rajeevan
Ph.D. Scholar
School of Education
Central University of Kerala, Kasaragod
E-mail ID- vivekanandha198@gmail.com

Dr. Vanitha.C
Assistant Professor
School of Education
Central University of Kerala,Kasaragod
E-Mail id: vanileela.c@gmail.com

Abstract

Buds Special Schools are registered with the Department of Education of the Government of Kerala and eligible for special grants through the Department of Education. There are 21 Buds Special Schools in Kannur district. Whether it's for teachers or students, technology are a big favorite thing but many schools don't have such facilities. This study explores the Assistive Technology (AT) facilities in Buds Special Schools in Kannur district for students with intellectual disability and to find out the uses of different Assistive Technology tools to teach the students with intellectual disability in Buds Special Schools.The present study is a qualitative and descriptive study. Collected data from 15 buds Special Schools from Kannur district. There are a total of 21Buds Special Schools in Kannur district and among them total 15 schools have been selected for this study.In order to achieve the objective of the study, the investigators developed an interview schedule for teachers and a checklist. The checklist consists of listing ofassistive Technology facilities and devices for the students with intellectual disability available in Buds SpecialSchools. The investigator personally visited the Buds Special Schools in Kannur district with the permission of the concerned head of the institutions. The study concluded that very few of them are using AT and majority of them depend on conventional materials for teaching-learning of special students. So it adversely affects the overall learning outcome of the students with intellectual disability in Buds Schools.

Key words: Assistive Technology Facilities, Students with Intellectual Disability, Buds Special Schools

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Introduction

Special Schools, called 'Buds', are set up by the Department of Education of the Government of Kerala aiming at provided for the developmental, social, and emotional needs of the students with intellectual disability. These children are being provided with the necessary medical attention, physical and mental therapy, mobility equipment, hearing aids, and vocational and educational training (Raghavan, 2002). Buds Schools are registered with the Department of Education of the Government of Kerala and eligible for special grants through the Department of Education. The State Poverty Eradication Mission (SPEM) or popularly known as Kudumbashree State Mission Team, District Mission Team, Experts and Medical Team regularly visit the Buds Schools for monitoring of schools.

After the implementation of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 in India, the Government of Kerala under the guidance of Kudumbasree and Gramapanjayathstarted Buds School and Buds Rehabilitation Centers (BRC) for improving the education of intellectual disability students. Liasidou (2010) puts emphasis on special needs is not personal trouble, it is public issue, therefore societies in their system need to pay attention on their policy and create a standard for the uses of technology for upgrading the quality and equality of the special needs education. In this respect, technology integration within education, considering the aspects of context, teacher education for technology, ICT policy, context, digital learning resources, and technology in curriculum is crucial.

Technological developments have led to important transformations in many aspects of life, education is no exception. The technologies used in special education have significantly changed over the course time (Edyburn, 2001). Assistive technologies in particular have helped to facilitate the skills that persons with special educational needs struggle to utilize in daily life (Gierrach and Stindt, 2009). Assistive technology is not just a technology; it can be both software and hardware. For example a teacher tells a story in the classroom, teacher narrates a story with help of picture cards and a normal child is able to catch it immediately. But for children with intellectual disability cannot grasp with the help picture cards or charts, at the same time the story narrated with the help of a video or animations a child can understand easily as well as it is remembered for a long time in his/her brain, These children may have multiple

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disabilities, This assistive technology, when used in class, can make learning more enjoyable and helps developing intelligence.The important role of AT to support play and cognitive development of children with motor impairment has beenstudied as well (Besio, 2002b; 2004).

The current textbooks are meant for normal .Textbooks of this nature is of not much use to these children. But we can increase their cognition with the use of technology in the classroom. Instead of these textbooks, technologies help them understand the different types of concepts like social skills, daily living skills, cooking, home cleaning, concepts of fruits, vegetables, vehicles, animals, birds, plants, flowers, letters and number system etc. That means any concepts we can teach them by using the assistive technology, it can be easy to access, manage, store and share anytime and anywhere.

Technological developments have led to important transformations in many aspects of life, not least of all education. The technologies used in special education have significantly changed over the course time (Edyburn, 2001). Assistive technologies in particular have helped to facilitate the skills that persons with special educational needs struggle to utilize in daily life (Gierrach and Stindt, 2009).Students with special educational needs may struggle to adopt social skills and to make use of their leisure time. Students with special educational needs may have difficulty in daily-life functions, such as eating, cooking, dressing and shopping (Gierrach and Stindt, 2009; Day, Dell and Smith, 2011).

Scope of study

The purpose ofthe current study was to find the status of the Assistive technology facilities available in Buds Special Schools in Kannur district of Kerala. The main objective for conducting this research study was the fact that there are no previous studies reporting on this area.Today, a variety of assistive technologies are used to bring out the cognitive potential of the students, provide them with communication opportunities, enable the curricula to achieve their objectives and empower the students to participate in the education process. It is time to change the method of teaching in Buds Schools; in this current scenario both parents and teachers don't aware of the term assistive technology. Today most of the (normal) government schools in Kerala, have a technology integrated class rooms but at the same time there are no such

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technology facilities in Buds Special Schools. The time has come for this kind of distinction to be change in education system of Kerala as well as our country.

Nowadays this kind of technology is active in other countries but our country is far behind for implementing such technological facilities in special schools. Whether it's for teachers or for students, technology is a big favorite thing but many schools don't have such facilities. In current education system technology implemented in government schools as part of the upgrading of education like smart classrooms, LCD projector, internet or Wi-Fi connections etc. The government does not provide any kind of technological facilities for these buds schools. They use the distorted potential of technology in class.

Evidence indicates that an estimated 90% of children who would benefit from assistive technologies do not have access to them and there is a huge unmet need for such devices (WHO, 2016, p. 1; MacLachlan, 2018; Ali et al, 2014, p. 58). UNICEF carried out a global survey which found that only 5-15% of assistive technology needs of children with disabilities are met (UNICEF, no date; Matter et al, 2016, p. 1; Borg et al, 2015, p. 7).

At the same time, the possibilities of technology are very useful for not only students but also teachers and parents. The role of technology is that brought into the classroom as an active and lively atmosphere. So in this current scenario the implementation of assistive technology facilities as well as assistive technology devices are very essential in Buds Special Schools.The total number of 15 Buds Special Schools are selected for the research study. The list of the Buds Special Schools selected for the research study includes:

1) Pratheesha Buds Special School Payyannu, Ramnthali.
2) Sishumithra Buds Special School,Mattannur
3) Buds Special School Karivellor,peralam
4) Buds Special School ,Mattool
5) Buds Special School ,Madai
6) SishumandiramBuds Special School ,Kolachery
7) SnehatheeramBuds Special School ,Kuttiyattoor
8) KannapuramGramapanchayathBuds Special School ,Kannapuram
9) Buds Special School ,Dharmasala

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10) SisumandhiramBuds Special School ,Pappinisseri
11) Buds Special School,Payyannur,Puttoor
12) PunarjaniBuds Special School, Mayyil
13) SnehatheeramBuds Special School ,Maniyoor
14) Buds Special School ,Patiyam
15) Buds Special School ,Vengad

Research on the use of assistive technology shows the ways and means of supporting learners with intellectual disabilities in their learning

Abed's (2018) Study on teachers' perspectives surrounding ICT use amongst Special Educational Needs (SEN) in the mainstream educational setting. This work's aim was centered on explaining and examining the viewpoints and experiences of teachers in regard to the adoption of ICT for learners with SEN in the overall learning setting, and identifying the relationship between inclusion and ICT.The study concluded that in the mainstream school environment, teaching has not always been modified in line with the needs of students, with assistive technology commonly implemented by learners in private environments.

Molster (2018) Attempted a study on to what extent does information and communication technology support inclusion in education of students with learning difficulties? The main intention of this study is to explore the relationship between information and communication technology (ICT) and inclusion. One of the results is that ICT use among students with learning difficulty is more frequent than among average students, but not as widespread as you would expect, considering the alleged affordances of ICT for these students.

Erdem(2017) Discussed a study on students with special educational needs and assistive technologies. The results of this study shows various types of assistive technology are used in special education and the use of assistive technologies generally have a positive effect on the students with special education. The results are discussed within the framework of the use of assistive technologies in special education and model implementations with the aim of contributing to the current assistive technology implementations presented in the literature.

Varghese(2017)Studied efficacy of multimedia instructional strategies on learning science concepts in children with moderate intellectual disability. The study concluded that the using of

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multimedia technology in teaching has become more helpful to learn not only science subject but also all other subjects among students with Intellectual Disability. Use of Multimedia Instructional Strategies in the classroom very helpful to learn science concepts within a short time without any effort.

Anuradha (2016) Carried out a study on importance of assistive technology in teaching for children with learning disabilities in India. The present paper focused on different types of assistive technology devices that were designed and used to solve written language, reading, listening, memory and mathematic problems of children with learning disabilities. There is a need for selecting the right technology tools for the children with learning disabilities, to enable achievement of the target goals, and highlighted instructional guides for the classroom teachers, that would make children with learning disabilities benefit maximally from the use of assistive technology tools, whether in the classroom or at home, in order that the technology would make the teaching – learning process enjoyable and productive. The paper also discusses possible challenges faced by developing nations in using assistive technology. The ways of improving potential for assistive technology for children with learning disability and to eliminate the learning difficulties to maximum extent are highlighted.

Aksal(2015) Analyzed a study on examination on information and communication technology (ICT) integration into Special Education Schools for Developing Countries. In reports, education context, ICT policy, ICT in curriculum and teacher education, ICT and digital resources were highlighted. Some of the reports of developing countries did not set special education needs, learners and ICT support for their learning. This research study aims to analyze ICT integration and facilities in special education schools in North Cyprus in order to set ICT policy in education. This research study shows adaptability of developing country to European ICT policy and furthermore the research provides comparison between context capacities with other counties in terms of a situational analysis.

Sanaman and Kumar (2014) Attempted to study on assistive technologies for people with disabilities in national capital region libraries of India. This paper aims to study the current status of the various Assistive Technology facilities available for the people with disabilities in National Capital Region Libraries, India. The study depicts the lack of Assistive Technology facilities in National Capital Region libraries. The study concludes that there are negligible

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amount of Assistive Technology facilities for the deaf/hearing impaired and locomotor impaired users in the institutions/libraries.

Data Analysis and Findings

List of Assistive Technology Facilities Available in the Buds Special Schools in Kannur District of Kerala

The following Table-1 identifies the list of sixteen various assistive technologyfacilities shouldnecessary to implement Buds Special Schools for the educational development of students with intellectual disability as well as for special educators.

Table -1.List of Various Assistive Technology FacilitiesEssential in the Buds Special Schools

Sl No	Assistive Technology facilities
1	Sensory room
2	Smart class room
3	Personal Laptops for teachers and students with intellectual disability
4	Adapted Computers, key board and mouse
5	Adapted Chairs
6	LCD Projector
7	Scanner
8	Photostat machine
9	Printer
10	Music System ,Mic and amplifier
11	Wi-Fi or internet accessibility
12	Closed-Circuit Television Magnification (CCTV)
13	Audio visual equipment are available in class room (CD,DVD and Pen drive)
14	Educational software for students with intellectual disability
15	Television with cable connection
16	Appointing the Resource teaches or persons(RPs) have knowledge of Information and Communication Technology (ICT)

Table 1 shows that list of different assistive technology facilities which are essential to achieve the educational improvement of students as well as special educators .Assistive technologies

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refer to products, devices or equipment that are used to maintain, increase or improve the functional capabilities of people with intellectual disabilities (Koulikourdi, 2008, p.387).

Assistive Technology Facilities for Student with Intellectual Disabilities Not Provided in the Buds Special Schools

The following Table 2 identifies, Assistive Technology Facilities for Student with intellectual disabilities not provided in the buds Special Schools.

Table – 2.Assistive Technology Facilities for Student with intellectual disabilities not provided in the Buds Special Schools

Sl. No	Assistive Technology Facilities for Student with Intellectual Disabilities Not Provided in the Buds Special Schools
1	Smart class room
2	Adapted Computers, key board and mouse
3	Audio visual equipment are available in class room (CD,DVD and Pen drive)
4	Adapted Chairs
5	Closed-CircuitTelevision Magnification (CCTV)
6	Appoint the Resource teaches or persons(RPs) have knowledge of ICT

Table 2 shows thatthe Buds Special Schools not supported Assistive Technology (AT) facilities for the students with intellectual disabilities .The main reason is that lack of funds and majority of these technological devices are very expensive and technical problems.Lack of access to assistive devices is due to a number of factors including high costs, limited availability, and lack of governance and inadequate financing in many settings, as well as a widespread lack of awareness and suitably trained personnel (WHO, 2016, p. 1; Director General WHO, 2017, p. 2; Borg et al, 2017, p. 1; McPherson & Clark, 2017, p. xi, 1). Lack of governance including legislation, policies and national programmes is a key barrier to the availability of assistive technology (Borg et al, 2015, p. 18-19).

Assistive Technology (AT) facilities for student with intellectual disabilities supported in the buds schools

The following Table 3 identifies the AT facilities for student with intellectual disabilities supported in the buds schools

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Table: 3.Assistive Technology facilities for student with intellectual disabilities supported in the buds schools

Sl. No.	Assistive Technology Facilities Supported in the buds Schools	Percentage of AT Facilities Supported in the buds Schools (N=15)
1	Television with cable connection	80%
2	Music System ,Mic and amplifier	60 %
3	Sensory room	6.6 %
4	Personal Laptops for teachers and students with intellectual disability	6.6%
5	LCD Projector	6.6%
6	Scanner	6.6%
7	Printer	6.6%
8	Photostat machine	13.3%
9	Wi-Fi or internet accessibility	6.6%
10	Educational software for students with intellectual disability	6.6%

Table-3shows that the percentage of Buds Special Schools supporting AT facilitiesfor the students with intellectual disability. It can be clearly notice that the only few number of buds schools are providing the AT facilities for students with intellectual disability.

Discussion and Conclusions

The results show that all the fifteen Buds Special Schools are providing poor assistive technology facilities. The Government not providing better AT facilities in Buds special schools.The main reason is that lack of fundsand financial support from government and central government. The other reasons are majority of these technological devices are very expensive and technical problems. The another reasons are difficult to access specific technology tools and resources based on thestudents' needs and requirements, lack of proper and continuous technology training and support, administrative support etc. There are 'Very Few' Assistive assistive technology facilities are available in Buds Special Schools for students with intellectual disability. Most of the schools (80%) are have television with cable connection but the majority of them do not in good working condition. Because of the lack of assistive technology facilities traditional way of teaching is presently following in Buds Special Schools.

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Traditional type of learning has been going on for many years in the Buds School and it has not changed. Charts, pictures and models, it gets destroyed or the children themselves destroy. For purchasing the teacher needs to apply fund to panchayath and municipality. Funds are not released as and when required. Therefore, there is not much teaching material in schools. While pen drive, hard disk, CD's and DVD's store a variety of videos and animations.

Buds special schools are not giving good infrastructure and learning environment for the students with intellectual disability. The special educators do not get appropriate training in the field of assistive technology. There is no appointment of the Resource teaches or persons (RPs) have knowledge of AT in Buds Special Schools. The government and panchayath is not taking any step for conduct workshops and seminars related to technology and integration of AT in special classrooms

Teachers working in Buds Special School want laptop because they need to upload every day the data about mid-day meal in the official site of panchayath, but most of the schools don't have the facilities like Wi-Fi connection or internet connection as well as computer system/personal laptop. The assistive technology is very useful for students at the same time for teachers also. Finally, the study concluded that very few numbers of Buds special schools are using AT and a majority of them do not. So it adversely affects the overall learning outcome of the students with intellectual disability as well as the professional growth of teachers in Buds Special Schools.

Educational Implications of the Study

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 state government, central government and panchayath for the integration of AT facilities for the students with intellectual disability in buds special schools.

2. The AT facilities increasing achievement in school as well as students with intellectual disability. Because it is need to provide the affordable AT facilities in Buds Special Schools.

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3. It is essential to give appropriate teacher training in the field of technology for updating new knowledge and information regarding Assistive Technology.

4. It is very essential to Appointing the Resource teaches or persons (RPs) have knowledge of Assistive Technology.

5. The government or Panchayath should take interest to conduct workshops and seminars related to Technology and integration of AT in special classrooms in Buds Special Schools.

6. Lack of governance including new educational policies, recommendations, legislation and national programmes is a barrier to the availability of assistive technology facilities. So ,it is important to implement new policies and recommendations in this current educational area is very essential.

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