AWARENESS AND KNOWLEDGE OF REGULAR SCHOOL TEACHERS ON AAC IN INCLUSIVE EDUCATIONAL SET-UPS

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CERTIFICATE

This is to certify that this dissertation entitled **"Awareness and Knowledge of Regular School Teachers on AAC in Inclusive Educational Set-ups"** is a Bonafide work submitted in part fulfilment for the degree of Master of Science (Speech-Language Pathology) of the student Registration number P01II21S0017. This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

Mysuru

September 2023

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DECLARATION

This is to certify that this dissertation entitled **"Awareness and Knowledge of Regular School Teachers on AAC in Inclusive Educational Set-ups"** is the result of my own study under the guidance of Dr. Amulya P Rao, Assistant Professor in Language Pathology, All India Institute of Speech and Hearing, Mysuru, and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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CHAPTER I

INTRODUCTION

Education is a learning process for individuals to attain knowledge and understand higher specific objects. It is a dynamic approach to change and is expected to influence or condition the social behavior of an individual receiving it. It is an evolving form of change that aims to condition or impact the social behavior of the person receiving it. Education is described as "a combined method that involves developing cognitive abilities, skills, and perceptions, all of which form our various outlooks and traits that guide us in life generally" (Bamisaiye, 1989).

Education is everybody's right as it helps develop and maintain the information, skills, and habits required to participate in the society. It assists people in developing and increasing their intellectual capacities to advance socially and adapt to social changes. In this competitive modern society/environment, education guides people to implement better solutions to their difficulties. Schooling is only one method of providing education.

Across the world, there are about 113 million students who have not been attending primary school. (Department for International Development [DFID], 2000). However, millions of children with disability are denied of their fundamental right that is going to school (Educational International, 2009). In India, around 25 million children are estimated to be excluded from school as they are marginalized by gender, poverty, caste, and disability (Ministry of Human Resource Development [MHRD], 2005; World Bank, 2004). The recent UNESCO report (2019) indicates that in India, there are around 78.64 lakhs of children with disability, out of which three-fourths of those aged five years are not attending schools, 12% of them have dropped out of

school, and 27% of them have never attended any educational set-up. According to National Education Policy 2020 (NEP), only 9% of children with disabilities complete secondary education, 45% of the disabled population are illiterate, and only 62.9% of individuals with disabilities aged between 3-to-35 years have been reported to attend regular schools (Sarkar, 2020).

To eradicate the educational exclusion of children with disabilities in regular schools, the Government of India has launched a campaign called Sarva Shikshana Abhiyan (SSA) or Education for All (2001) with a critical focus on the Universalization of Elementary Education (UEE). SSA not only provides access, enrolment, and retention to education for all children in the age range of 6-to-14 years as per the Right to Education Act (2009) but also adopts zero rejection policy ensuring, no matter the kind, class, or severity of their handicap, every child with special needs (CWSN) receives a rewarding and high-quality education. According to SSA (2001), the intervention at inclusive schools should include identification of children with disability through functional and formal assessment; choosing appropriate educational placement; preparing an Individualized Educational Plan; provision of aids and appliances, and other resource support; teacher training; providing barrier-free environment; continued monitoring and evaluation at equal intervals of time; and a special focus on girls with special needs. Though this program is centrally sponsored, it is implemented by the state government. By guaranteeing equity and inclusion at all educational levels, assuring fundamental requirements in schooling delivery, encouraging rationalization of education, and helping states execute the right of children to receive an education at no cost, it seeks to eliminate social and gender disparities in learning. (RTE, 2009). According to the Rehabilitation Council of India Act (1992), children with disabilities have the right to be educated by a qualified

teacher. NEP 2020 also aims to provide inclusive and equitable quality education for all including children with disabilities, by 2030.

Generally, children with communication disorders are enrolled in special schools or inclusive educational set-ups. Individuals with Disability Education Act (IDEA) mandates school districts to develop a continuum of alternative placement alternative solutions rather than by setting. The numerous educational contexts where, this framework represents how an IEP may be utilised to address the particular needs of learners with impairments. These placement possibilities range from the least restrictive (general education classroom) to the most restrictive (residential facility).

Figure 1.1

LRE continuum of service

Note. Education service supported in different settings by IRIS CENTER, n.d. https://iris.peabody.vanderbilt.edu/information-brief/least-restrictive-environment-lre/

In general, education classroom, students with special needs and regular students are enrolled together with same curriculum. Regular teachers provide services to normal kids and kids with special needs within the same classroom by making accommodations or modifications as needed and interact with special educators to support pupils with disabilities. Only children with exceptional needs are enrolled to special education classes. Here, special educators provide specialized teaching, often

referred to as a distinct instructional setting, a small group of kids with identical demands are taught in a different class. Assistance are provided at a facility that has been set up, hired, and equipped to provide support for and educate learners who have identical requirements related to disabilities. Children in special schools attend classes in a different public or private facility for the majority of their educational day. "Homebound education setting" typically refers to a situation in which a student receives their education at home rather than attending a traditional school due to medical reasons, disabilities, or other special needs that make participation in a regular classroom environment difficult (Cook et al., 2008).

Students hospitalized for medical reasons and who are unable to attend their regular schools might receive educational support in the hospital education setting. These facilities are, coordinated by general, special education, and residential faculties who design and deliver instruction to children with special abilities.

Based on the abilities of the child with special needs, the type of education system is decided. With more children with special needs being identified at an earlier age, inclusive education is becoming more important nowadays. The learning is suitably adapted to meet the needs of children with disabilities in the inclusive set-up by developing Individualized Education Plans (IEP). IEPs for children with disabilities are prepared by a team of professionals, including regular teachers, special educators, speech-language pathologists, audiologists, parents, or additional professionals, as required. This IEP involves using Augmentative and Alternative Communication (AAC), which has been proven to be a potential means of learning in an educational setting (Beukelman & Mirenda, 2013; Downey et al., 2004). AAC is a means to communicate besides speech. Augmentative communication adds to speech, whereas alternative communication is used instead of speech. AAC can be aided (low-tech, like

communication boards, and high-tech, like an app in iPad) or unaided (gestures, manual communication, and sign language). Generally, many equate AAC to only expensive high-tech devices, but for a few potential users, the ideal AAC system would be low-tech with a minimal price (Downey et al., 2004). Even in India, as per SSA and National Curriculum Framework (2005), curricular adaptations are made inside and outside the classroom by arranging assistive or AAC tools/devices. Amongst the AAC tools, pictorial communication boards, charts, flashcards, toys, and similar are suggested to be used (SSA, 2016). The NEP 2020 also recommends using assistive, augmentative, and alternative communication (AAC) tools/devices like appropriate technology-based tools and communication boards in inclusive educational set-ups. In addition, it also conducts sensitization programs for teachers, principals, administrators, students, counsellors, and parents/caregivers on the requirements of all the students and the usage of assistive aids considering inclusive and equity education.

Need of the Study

Despite all these government educational provisions in India, due to its wide sociocultural, economic, religious, geographic, and linguistic variety, implementation of these national developmental initiatives is facing issues. In India, education for children with special needs is mainly provided in segregated settings such as special schools and non-governmental organization (NGO) programs (NEP, 2020). The awareness of inclusive education and the government facilities for those inclusive schools in India is still in the budding stage. Some learning facilities are still sceptical about integrating children with disabilities with typical students (Balasubramanium, 2012). Inclusive education is failing to achieve success due to various challenges such as lack of positive attitude among teachers, lack of resources and infrastructure like AAC tools for communication and learning and other assistive devices, unawareness

among stakeholders of the educational institutes as well as parents, irregular plans, unsuitable curriculum, and improper execution of the government policies (Bhat & Geelani, 2017). Regular school teachers, one of the major team members in developing IEPs for children with communication disorders in an inclusive set-up, need to be aware and have knowledge of the AAC tools/devices that are important for communication and learning.

Educators are essential in integrating the use of AAC into learning programs. The achievement of students who use AAC depends on both traditional and specialized teachers, according to evidence because they give students more opportunity to express themselves and access to AAC, which can enhance their communication intake. Teachers have had issues modifying the educational programme for AAC children and evaluating the educational progress of pupils (Finke et al., 2009; Kent-Walsh & Light, 2003). In order to address the language-based structure of the educational environment, SLPs play an essential part (ASHA, 2010); they fill in the gaps where instructors would be less likely to prioritise communication access (Kurth & Keegan, 2014). Studies done by Andzik et al. 2017 50% of the teachers gave descriptions of their instructional strategy, while others did not suggest intentional lesson planning, which was particularly true for educators who placed a higher priority on teaching basic life skills. Educators' belief in adopting on the spot or a lack of time may have restricted planning. To fully comprehend how insufficient planning could affect AAC communicators' education, additional studies are required. Educators rated several forms of education, such as adaptations, studying across a variety of modalities, facilitating guidance, and purposefully creating small groups of pupils, as motivating according to O'Neill et al.'s 2018 research. Regarding AAC, most teachers reported employing language modelling on students' speech-generating devices (SGDs) which proved extremely effective in

boosting receptive and expressive language abilities. Teachers' perceptions of modelling were also reinforced by their broader approach to teaching communication throughout the day and across activities to assist communication development.

According to the School Screening Report on Communication Disorders by the All India Institute of Speech and Hearing (AIISH, 2020), Mysuru, 13.3% of school-going children were found to be at risk for communication disorders, out of which 7.3% were at risk for hearing disorders, and 6 % were at risk for speech & language disorders. This being a major concern, it becomes of utmost importance for the regular school teachers to be aware and know about various communication disorders along with the facilities provided by the government to make curricular adaptions for them in the school set-up. This would help them to make proper referrals, eventually leading to better education for children with communication disorders.

Despite increasing research on how AAC can assist students with communication disorders in acquiring access to high-quality education, the extent to which such research has been conducted in inclusive education settings, especially in India, remains a question. Hence, the current study was taken up.

Aim

To check for the awareness and knowledge of regular school teachers about Augmentative and Alternative Communication (AAC) in the inclusive education set-up.

Objectives

1. To check for the awareness and knowledge of regular teachers about AAC.

2. To check for the awareness and knowledge of regular teachers about various AAC aids/tools (low-tech and high-tech) used in classroom setups and how to use them.
3. To investigate the awareness and knowledge of regular teachers on various government policies and facilities for the use of AAC in inclusive education setup.

Null hypothesis

There is no awareness or knowledge among regular teachers about

1. AAC, in general.
2. AAC aids/tools used in the classroom set-up and how to use them.
3. Various government policies and facilities are provided for AAC in inclusive education setups.

CHAPTER II

REVIEW OF LITERATURE

Education is crucial for developing an equitable nation and promoting national progress. In addition to any instruction that results from the endeavour, learning is defined as "the planned, organized, and ongoing attempt to share, incite, or gain understanding, beliefs, mindsets, abilities, or perceptions" (Cremin, et al.p. 27)". For India to continue to flourish and maintain its position as an international pioneer in financial growth, social justice and equality, scientific research, national integration, and heritage conservation, all people must have access to excellent educational opportunities (NEP, 2020). All have the right to education (SSA, 2001; NEP, 2020). However, the education system followed across the world and/or within the states of a country differs (Singal, 2006).

2.1. Education in India

Generally, in India, schooling is one of the ways to get educated. Most states' education in India is divided into three stages: elementary, upper primary or intermediate, and secondary schooling. Children between the ages of 6 and 11 attend primary school (Grades 1–V), those between the ages of 11 and 14 participate in upper primary or middle school (Grades VI–VII), and those between the ages of 15 and 18 attend secondary school. Children are frequently enrolled in elementary school when they are six years old. At this point, the child begins to attend a formal institution, and thus, formal education (schooling) begins. A child's primary education establishes the framework for physical, mental, emotional, intellectual, and social development. This stage of education should be related to functional literacy, which literates' people via the application of practical knowledge and is an essential requirement for economic

growth, social structure advancement, and the effective functioning of democratic institutions (NEP, 2020).

2.2. Status of education for children with disabilities

The journey of education for children with disabilities have come a long way over the years. The growth of education facilities for children with special needs in India has been possible due to various government policies, facilities, acts, provisions and schemes, to the extent that from no admission era to be a part of inclusive education.

The educational journey dates back to 1982 with the Department of Secondary and Higher Education under the Ministry of Human Resource Development implementing the scheme 'Integrated Education of Disabled Children (IEDC)' in formal schools. The IEDC (1982) scheme's The main objective is to offer disabled kids in traditional schools educational possibilities and encourage their continued enrollment in the educational system. Once disabled students in special schools are able to communicate effectively and have basic life skills, they must be given consideration for inclusion into regular classrooms. According to IEDC (1982), the following types of disabled children must be integrated into the regular school system, both formal and non-formal

- Children with locomotor disabilities
- Children with hearing impairment
- Children with visual impairment
- Children with mental retardation
- Children with multiple handicaps

After five years, the Project Integrated Education of Disabled Children (PIED) was introduced in 1987 in ten districts across the whole nation in 10 States and Union

Territories in collaboration with the United Nations International Children's Emergency Fund (UNICEF). In the Persons's with Disability (PWD) Act (Government of India, 1995), section 26, it is clearly mentioned that the local authorities and the respective governments should ensure that every child with disability has an access for free education in an appropriate environment till they attain 18 years of age. Later in 2009, the Right to Education Act (RTE), made this availability of free education a legal right for all the children with disability without any discrimination.

Sarva Shikshan Abhiyan (SSA), a pan-Indian program for the globalization of primary schooling, was launched in 2000 with the introduction of the "Zero Rejection Policy" in education. SSA makes sure that each child with special needs (CWSN), irrespective of the kind, scope, or severity of their condition, obtains a suitable education (SSA, 2007:1). SSA expands the range of possibilities from special and mainstream/'regular' schools to Education Guarantee Scheme/Alternative and Innovative Education (EGS/AIE) and Home-Based Education (HBE). As a result, an implicit foundation that inclusion should increase or permit traditional educational engagement of children with impairments does not necessarily hold under the SSA paradigm. Instead, it seems to support the idea that education should be delivered in the setting that best meets the requirements of the child, offering organisational flexibility. The SSA identifies eight priority intervention areas for inclusive education:

1) Conduct a survey to identify CWSN

2) Evaluation of CWSN

3) Making available assistive devices

4) Collaboration with non-governmental organizations/government programs

5) Unrestricted utilization

6) IE training for teachers

7) Appointment of resource teachers

8) Curriculum adaptation/textbooks/suitable teaching-learning method (TLM)

Inclusionary education is a "system of instruction in where learners with and without disabilities acquire knowledge into a team, as well as the framework of instruction and education has been appropriately modified to satisfy the educational requirements of various kinds of learners with disabilities" (Rights of Persons with Disabilities (RPwD) Act, 2016). The RPwD act also increased the 3% reserve to 5% for individuals with underlying disability in all public higher education organisations. An individual who has at least 40% of the 21 disabilities listed in the RPwD law is considered to have a benchmark disability. The act also stressed barrier-free access as a non-discrimination policy (Narayan, John 2017).

The National Education Policy (NEP, 2020) is also consistent with the RPwD Act (2016). The policy prioritizes facilitating normal schooling from the foundational stage to higher education for children with mild to severe disabilities by stating that they can attend regular or special school (NEP 2020, Part-I, Section 6.10). It also states that the school ensures the recruitment of cross-disability-trained special educators, assist in providing tailored adjustments and support mechanisms to meet the needs of the disabled child and provide barrier-free access (NEP 2020, Part-I, Section 6.11). NCERT will collaborate with expert groups such as Department of Empowerment of Persons with Disabilities (DEPwD) to develop a national curricular framework (NEP 2020, Part I, Section 6.10). National institute for open schooling (NIOS) is in charge of creating high-quality modules to teach Indian Sign Language and, through this, other fundamental courses. The National Assessment Centre, PARAKH, will develop rules

and methods for assessing children with disabilities. This will be true for all exams, including the higher-education entrance exam (NEP 2020, Part-I, Section 6.13).

With all these government acts, schemes, policies, and facilities in place, a range of schooling facilities are made available for children with special needs. For students with special requirements, India offers a variety of educational options:

Formal Education

It is a type of education that happens in a school environment (Malcom, 2013). Under the formal education system, children with special needs can either get into an integrated education system or an inclusive education system. Inclusive education system is where “students with disabilities are served primarily in the general education settings, under the responsibility of a regular classroom teacher. When necessary and justifiable, students with disabilities may also receive some of their instruction in another setting, such as a resource room" (Mastropieri & Scruggs, 2004, p.7). On the other hand, in the integrated education system is where students with special needs can attend the regular school whenever possible. Here, the emphasis is to fit the child with special needs into mainstream rather than adapting the system to meet the educational needs of the student. In India, children with mild disabilities are reported to be provided with integrated education whereas, children with severe disabilities generally, do not attend regular schools and under rare circumstances attend special schools (Sharma & Deppler, 2005). The team members involved in such set-ups are regular teachers, educational administrative staffs, parents, children with and without special needs, and allied professionals such as resource teachers, special educators and shadow teachers.

Special Schools

This is a program of the Ministry of Social Justice and Empowerment. Children with severe multiple disabilities who are challenged to cope in regular schools are referred to such special schools. Most of these special schools are located in cities and run by volunteer organizations. Most are residential schools with boarding, lodging, and other facilities for free. Presently, the country has around 3,000 special schools for challenged students. Approximately 900 of them are specialized for deaf children, 400 for visually impaired children, 1000 for mentally disabled children, and the remaining 700 are for children with physical disabilities. A 40% disability is a criterion for identification and certification to enter these special schools. In special schools, a team of professionals is available, which includes special educators, resource teachers, speech-language pathologists, physiotherapists, occupational therapists, psychologists, and regular teachers to help children with special needs improve their communication skills and quality of life.

National institute of open schooling

The National Institute of Open Schooling (NIOS), formerly known as the National Open School (NOS), was founded in 1989 as an independently recognised organisation having the aim of offering education at the educational stage using an open learning system as a substitute to the traditional system. The basic course, conceptually similar to class VIII, secondary education, higher secondary, and vocational courses are all offered. For Universal Elementary Education (UEE), which includes a programme for children with disabilities, the NIOS also provides an Open Basic Education programme. It offers a number of types of open basic education courses:

- Open Basic Education (OBE)- This program is divided into 3 levels

1. Level A- Same as class I-III
2. Level B- Same as class IV-V
3. Level C- Same as class VI-VIII

Home-based education (HBE) - " HBE is crucial to SSA and is described as "the instruction of kids with significant intellectual/physical disabilities that may be trained in an amalgamation of home-based and alternative learning environments in order for them to acquire autonomous living competencies" New Directions in Inclusion (SSA, 2006, p. 5). Despite the government's strong support, the HBE explanation is based on a somewhat unclear description. "Although no evaluation/impact assessment studies are available to estimate the efficacy of HBE programs, research highlights the following advantages" according to SSA (2006: 6) and these include "parents becoming effective teachers," "progress in overall development," and so on.

2.3. Children with special needs availing education in India

There are numerous surveys done across India in order to find out the percentage of children with special needs enrolling into schooling or not and as to what type of schooling. Until 1998, integrated education was provided to 8,90,000 students in various states through the senior secondary level (NCERT, 1998). By 2002, the scheme had reached 41,875 schools, benefiting over 1,33,000 disadvantaged children in 27 states and four union territories (Department of Education, MHRD, 2003). More over 5,60,000 learners with special education needs (SEN) were enrolled in regular schools through DPEP, accounting for nearly 70% of the nearly 8,10,000 learners with SEN identified through this program (DPEP, 2003). The present enrollment ratio in conventional schools per 1000 impaired children aged 5 to 18 years is greater in rural areas (475) than in urban areas (444). [NSSO, 2002]. According to the NSSO (2003),

at least one impaired person is found in 8.4% and 6.1% of total estimated households in rural and urban India, respectively.

According to National Sample survey Office (NSSO, 2003), approximately 55% of the PwD were illiterate, with only 9% completing secondary or higher education. Surprisingly, only 11% of PwD aged 5-18 years were enrolled in special schools in metropolitan regions, compared to less than 1% in rural areas. Only 15 to 35 percent of PwD completed a vocational course, with 74 to 80 percent in the non-engineering track (NSSO, 2003). However, there are inconsistencies in the numerous survey results regarding the prevalence of PwD. A little is known about how these regulatory changes affect classroom educational processes, teachers' understanding of increased diversity, and student learning experiences. Data collected under DISE on children with impairments in elementary courses show that their numbers vary yearly. There were 1.75 million such youngsters in 2003-04, compared to 1.40 million in 2004-05. However, their enrollment in primary school has always remained about 1% of the total. In 2006-07, over 1.42 million students with disabilities were enrolled in elementary schools nationwide, with 1.04 million in primary and 0.38 million in upper primary courses.

India has a rich and progressive policy landscape where the number of children with disabilities enrolled in regular schools has increased dramatically. According to recent data, 61% of children with impairments aged 5-19 years attend an educational institution (UNESCO, 2019), up from less than 2% in 2001-2002 (Mukhopadhyay & Mani, 2002). According to Unified District information for Education (UDISE), the proportion of children with disabilities enrolled in primary school was 0.98 percent in 2019-2020. This suggests that many children with disabilities are either not in school or are in school but are not detected. A comparison of enrolment numbers from 2014-

2015, 2015-2016, and 2016-2017 reveals a decreasing tendency across all school levels, except for higher secondary in 2016-2017. UDISE is one of the world's largest education management information systems, serving approximately 1.5 million schools, 8.5 million teachers, and 250 million students. Recent system enhancements attempt to enable real-time data collecting.

2.4. AAC in inclusive education

In an inclusive schooling, ‘speech’ cannot serve as an all-time mode of communication in the classroom due to the presence of children with special needs. They would require either an augmentative or an alternative mode of communication. AAC refers to strategies and technology used to compensate for an individual has impaired communicative competence (Light, 1989), which might be temporary or permanent (American Speech and Hearing Association, n.d.). It employs techniques and strategies to either augment or alternate speech, and can be as simple as a shrug of the shoulders or as complex as voice generating gadgets. AAC can enable people to interact with other members of the community independently and integrate into society.

There are three types of AAC approaches: no-tech, low-tech, and high-tech AAC (Cook, 2015). No-tech Because it relies on the interpretation of facial expressions and voluntary motor gestures, such as sign language, to communicate nonverbal communications, AAC is considered the oldest of the three AAC types (Smith, 2006). To facilitate communication, low-tech AAC employs simple materials such as books and display boards with extensive lexicons of images and phrases (van de Sandt-Koenderman, 2004). High-tech AAC refers to the employment of electronic devices to achieve an AAC goal. Gadgets in this category, such as smart gadgets and dedicated AAC devices, integrate hardware and software to assist a user's communication needs.

A typical feature of modern AAC solutions is the use of speech generating devices (SGDs) to convert a user's intended meanings into speech. AAC communication is frequently defined as either un-assisted or aided, depending on whether the solution relies exclusively on the human body or interacts with an external communicative assistance for communication (Cook, 2015). The National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities (1999) provides alternative and augmentative communication devices (AAC) to help people with speech impairments or low vocal volume communicate, such as speech generating devices, voice amplification aids, and communication software. For visually handicapped people, technologies such as magnifiers, Braille or voice output devices, large print screens, closed circuit television for magnifying papers, and so on. On the contrary, enough technological devices and other aids, in addition to sufficient and language-appropriate educational resources like big-print books and Braille, would be readily accessible at the institution to incorporate and involve the children in classes. (NEP 2020, Part-I, Section 6.11). NEP 2020 discusses reforming teacher education programs, sensitization, early intervention, support, and specific pedagogy to teach disabled children must be integrated into teacher education programs (NEP 2020, Part-I, Section 6.14).

2.5. The team involved in inclusive education and their roles

Inclusive schools would require a team of professionals helping children with special needs to cope up in the classrooms with the curriculum and communication. Educational teams have found to be beneficial in enhancing the classroom involvement of children with special needs in regular classrooms (Hunt et al., 2002; Lund & Light, 2007). A team of professionals are also required to help regular teachers to communicate and teach children with special needs better by using AAC systems

provided by the government. Augmentative and alternative communication (AAC) has proven feasible for improving students' social and intellectual inclusion in school (Beukelman et al., 2012). Teams of special education teachers and an SLP who worked in self-contained secondary classrooms observed communication and educational gains connected with students' use of an AAC device, which were further influenced positively or adversely by various facilitators and barriers. The American Speech, Language, and Hearing Association (ASHA, 2002, 2005) has driven a multidisciplinary approach to AAC service delivery through collaborative teaming. Any professional or family member interacting with a student using an AAC system should be part of a multidisciplinary team serving the student (ASHA). De Bortoli et al. (2012); & Myers (2007) emphasized the importance of implementing AAC in inclusion. There should be appropriate competent staff and professional team collaboration to give acceptable care to children with special needs who utilize AAC in an inclusive setting. Important individuals responsible with developing assistance plans to encourage the integration of a child with a disability in a regular elementary school needed to work collaboratively as a result of four critical factors:

- Access to diagnosis and finance,
- Mechanisms for team communication,
- Practical methods of collaboration, and
- Shared understandings of inclusiveness.

The themes provide insight into how to form effective collaborative teams to assist children with disabilities in participating in mainstream education, which may improve child educational outcomes and quality of life (Hargreaves et al., 2021; Heras et al., 2021). Team members involved are special educators, resource teachers, shadow

teachers, speech language pathologist, regular teachers, educational administrators, parents, and any other allied professionals.

Special educators in inclusive schools are responsible for direct teaching, adapting teaching strategies and materials, coordinating instructional planning, scheduling and directing special education aids and interpreters, promoting peer relationships, teaching sign language to deaf children, and teach how to use other AAC tools to children with special needs in classroom. Special educators advise ordinary teachers and parents of students with special needs in inclusive schools (Aitha, 1999).

Resource teachers also play an important role in inclusive schools to help to assist the class teacher and to give additional one to one support for children with communication difficulties, modify curriculum suitable to special child, make materials and teaching techniques for child. They will monitor, assess, and document the progress of children in the classroom, as well as provide guidance to teachers and parents (*The Role of the Resource Teacher*, 2008)

A shadow teacher's role is to help a student who needs Optimal Learning (OL), support in his/her school academics by filling in the gaps in the learning process, to help the student build self-confidence, to promote positive interaction in the classroom by helping the student focus on important concepts, and to help the student develop academic and social skills (*The Role of a Shadow Teacher*, 2014).

A speech language pathologist is also team member in inclusive schools who work together with general education professionals to decide how effectively to provide services (whole group, small group, etc.). Speech language pathologists can make a significant contribution by investigating the various ways they can collaborate with educators to serve children with communication-related challenges in the general

education classroom (Ehren et al., 2009). Speech-language pathologists (SLPs) provide appropriate speech-language services in Pre-K, elementary, middle, junior high, and high schools, with no school level being neglected. (It should be noted that in some states, infants and toddlers are included in school services.). The key requirement for SLP positions with students with disabilities is if the disorder has an influence on students' education. As a result, SLPs address personal, social/emotional, academic, and occupational issues that affect academic achievement. SLPs give assistance that is age and learning needs appropriate for each individual student and is chosen through an evidence-based decision-making process (ASHA). According to the distinctive facts of every instance, local educational authorities (LEAs) were given the option to include speech and language therapy as either a non-educational or instructional programme under the Education Reform Act of 1988 and the subsequent Lancashire Judgement (1989). With the publication of the Code of Practice (GB.DfEE, 1994), which incorporated speech and language therapy offerings into the framework of special schooling, the approach was further standardized. Similarly, the action plan generated from the Government Green Paper, Excellence for All Children (GB.DfEE, 1997), specifically aims to develop efforts to improve the provision of speech and language therapy services to schools. On the other hand, in India also government provides such facilities like assistive tools, Augmentative and Alternative communication systems, and a team of professionals in inclusive schools to help student with disabilities (NWA, 1999; SSA, 2000; NEP, 2020). It is suggested that rather than assigning children to models of service based on a diagnostic of communication impairments, care for children with complex and physical requirements using AAC systems in regular elementary schools should be decided on a case-by-case requirements (LANCASHIRE JUDGMENT (1989) Hence, speech – language pathologists are important team

members while implementing AAC in inclusive school. They are the professionals who assess the child's language age and mode of communication based on child performances. Based on the abilities of the child they will provide suggestions for AAC systems that can be used, strategies for implementing AAC systems in and outside of classrooms, and guide other team members for the same.

Teachers play a crucial role in incorporating AAC use into students' curriculum. Understanding and adapting to the requirements of students with special needs has become increasingly important as the field of education evolves. The Bachelor of Education (B.Ed.) curriculum recognized this need and combined specialized knowledge to provide future educators with the skills and understanding needed to successfully teach and support students with various abilities and learning needs. The B.Ed. curriculum provides an overview of the field of special education. This involves an examination of the historical context, laws, and policies that have shaped the inclusion and accommodation of students with special needs in mainstream educational settings. This includes information about differentiated instruction, Universal Design for Learning (UDL), and individual education plans (IEPs). An inclusive BED curriculum incorporates cultural competency and sensitivity, as it is critical to understand how cultural backgrounds connect with special needs. This aids educators in creating a culturally responsive and inclusive learning environment. An inclusive B.Ed. curriculum improves teacher preparation by ensuring that graduates can address the different needs of their students and provide quality education to all.

All these above data indicate that in spite of the presence of various government policies, acts, schemes, and facilities, not all children with special needs are getting enrolled in one or the other type of schooling, especially inclusive education. This has been ascribed to the lack of knowledge about children with special needs, education

options for them and lack of emotional support from educational professionals (Dafiah et al., 2020). In addition, AAC is not being implemented properly in the classrooms. The presence of these difficulties has been attributed to lack of understanding, lack of training of professionals, insufficient resources, infrastructure, concerns about classroom dynamics, parental preferences, assessment, and placement challenges (Kaushik, 2018). Two inclusion-experienced instructors were employed in divided settings, according to Andzik et al. (2019). In that research, instructors admitted to having had a bit of AAC instruction, but they also felt they were in charge of determining the AAC requirements of their pupils and had trouble working with SLPs as well as other people on the team. Teachers have also experienced problems adapting the curriculum for students who use AAC and assessing students' learning (Finke et al., 2009; Kent-Walsh & Light, 2003). Teachers regarded differentiated education as promising, including adaptations, learning through numerous modalities, scaffolding instruction, and strategically building student small groups.

While the value of AAC in facilitating effective communication for students with complex communication needs in inclusive settings is becoming more widely recognized, some major findings and trends emerge from the existing body of research. While regular teacher awareness and knowledge of AAC vary, there is a definite need for continuous initiatives to improve their understanding and competency in this essential area. We can create more inclusive and communicatively supportive environments for all students, regardless of their communication ability, by addressing these knowledge gaps and facilitating teamwork. Literature has shown that teachers' attitudes, awareness and knowledge play a major role in implementing AAC in classrooms. Hence, the current study was conducted in order to add on to the literature

as well as understand regular teacher's awareness and knowledge about AAC in inclusive schools.

CHAPTER III

METHOD

A descriptive survey method was used in order to assess the knowledge and awareness about AAC among regular school teachers working in inclusive schools. The study was carried out in the following phases.

Phase 1: Development of the questionnaire

Phase 2: Content validation of the questionnaire

Phase 3: Pilot study and finalization of the questionnaire

Phase 4: E-survey

Phase 1 – Development of the Questionnaire

A questionnaire was developed after a few brainstorming sessions. The developed questionnaire had two major parts, which are as follows:

Part A- Demographic Details

In this section, questions were framed to get information about teachers, their workplace, and years of work experience in an inclusive school. In addition, this section also included questions related to the number and type of children with special needs enrolled, the presence of professionals recruited to help children with special needs in the classroom, and their roles & responsibilities.

Part B - Awareness and Knowledge about AAC in Inclusive Schools

This section contained questions related to awareness about AAC in general and its use in school set-up. It also covered questions related to the team members involved, the role of the team members (special educators, shadow teachers, resource teachers,

and regular teachers), and government schemes related to facilities for children with special needs at school.

Phase 2 – Content Validation of the Questionnaire

The developed questionnaire was subjected to content validation at two levels. Firstly, the questions were content-validated through a literature review. Simultaneously, the questionnaire was given to 10 speech-language pathologists (SLPs) with more than five years of experience in AAC.

The 8 SLPs were asked to validate the content of each question for the parameters, relevance, simplicity, clarity, and ambiguity on a 4-point rating scale. The relevancy parameter assessed the applicability of questions. The clarity parameter checked how clear the questions are. The simplicity parameter estimated how easily teachers can understand the questions. The ambiguity aspect ruled out the possible confusions present about questions. Content-Validity Index (CVI) was calculated based on the relevancy ratings. The types of CVI and their formula are provided in Table 3.1.

Table 3.1

CVI Index and their Formula

The CVI indices	Definition	Formula
I-CVI (item-level content validity index)	The proportion of content experts giving item a relevance rating of 3 or 4	I-CVI = (agreed item)/ (number of expert)
S-CVI/Ave (scale-level content validity index based on the average method)	The average of the I-CVI scores for all items on the scale or the average of proportion relevance judged by all experts. The proportion relevant is the average of relevance rating by individual expert.	S-CVI/Ave = (sum of I-CVI scores)/ (number of item) S-CVI/Ave = (sum of proportion relevance rating)/ (number of expert)
S-CVI/UA (scale-level content validity index based on the universal agreement method)	The proportion of items on the scale that achieve a relevance scale of 3 or 4 by all experts. The universal agreement (UA) score is given as 1 when the item achieved 100% experts in agreement, otherwise the UA score is given as 0.	S-CVI/UA = (sum of UA scores)/ (number of item)

Note: The definition and formula were based on the recommendations by (Lynn,1986), (Davis, 1992), (Polit & Beck,2006) and (Polit et al.,2007). Reprinted from "ABC of content validation and content validity index calculation", by M. Yusoff, 2019, Education in Medicine Journal, 11(2), p. 49-54. Copyright 2019 by Penerbit Universiti Sains Malaysia.

The cut-off score for the CVI index with ten experts validating the content has been provided as 0.78 (Lynn, 1986). Questions and options with CVI scores less than the cut-off were subjected to modifications.

Phase 3: Pilot Study and finalization of the questionnaire

The information about inclusive education schools was collected through contacts with friends and colleagues who work at inclusive schools in different states of India. Convenience and purposive sampling, along with snow-ball sampling was used to select and reach participants. Twelve regular teachers (3 per school) from four English medium inclusive education set-ups, SES Gurukul (Pune), Vijaynagar High-school (Gujarat), Jiyana primary school (Gujarat), Shri Sardar Patel, and Swami Vivekananda High School (Gujarat) participated. Written permission from schools, as well as written consent from the participating teachers was taken.

Material used

The validated questionnaire was converted into a Google Form. This Google Form was circulated among the participants.

Procedure

Participants' e-mail addresses and phone numbers were collected from the school or from teachers, and the Google link was shared via e-mail or WhatsApp. Along with filling out the questionnaire, teachers were also asked to provide feedback about each question on a 4-point rating scale for the parameters, clarity, simplicity, and ambiguity.

Data Analysis

Based on the average ratings provided in terms of clarity, simplicity, and ambiguity and the feedback provided by the participants, the questionnaire was further modified. In addition, the type of answers received from the participants also provided insight on whether to retain/modify/remove the question. This modified questionnaire

was considered the final one to assess regular school teachers' awareness and knowledge of AAC in inclusive schools.

Phase 4: E-survey

Participants

The study included 100 regular teachers from 22 various English mediums Inclusive education schools in and around Mysore and other states. Schools and participants were selected based on purposive, convenience, and snowball sampling. The Guidelines for Bio-behavioural Sciences for Human Subjects (Venkatesan & Basavaraj, 2009) were followed. Written permission from schools, as well as written consent from the participants, were taken. Information about number of participants from each inclusive school has been shown in table 3.2

Table 3.2

Inclusive schools in and around the Mysuru

Sr. No.	School name	Number of participants
1	Aga Khan School (Gujarat)	2
2	Ultra vision Academy (Gujarat)	9
3	KV (Chennai)	5
4	JG International School (Gujarat)	5
5	JNV Idukki (Kerela)	5
6	JNV (Hyderabad)	2
7	JNV (Jabalpur)	2
8	JSS Public School (Mysuru)	25
9	KV RHE (Pune)	16
10	KV Rajkot (Gujarat)	5
11	Sadviveka English medium school (Mysuru)	3
12	School of Excellence (Maharashtra)	2
13	St. Xavier International school (Indore)	2
14	Sunny sky English high school (Gujarat)	5
15	Symbiosis International school (Maharashtra)	1
16	GBS (Delhi)	1
17	Cambridge International school (Gujarat)	2
18	KV (Karnataka)	2
19	Christ School Rajkot (Gujarat)	2
20	KV EME Baroda (Gujarat)	2
21	H l tuition classes	1
22	K. V MIRC Ahmednagar (Maharashtra)	1

Note: ‘KV’-Kendriya Vidyalaya, ‘JG’- , ‘JNV’- Jawahar Navodaya Vidyalaya , ‘JSS- Jagadguru Sri Shivarathreeshwara, GBS- Gyan Bharti School,

Inclusion and exclusion criteria

- Teachers should have at least one year of teaching experience
- Currently must be working in an English-medium inclusive school
- Those who did not fall into the above two criteria were excluded

Among 100 participants, 44% worked in government schools, 30% in private-aided schools, 22% in private unaided schools, 1% in informal schools (Non-Formal Education (NFE) is defined as a structured educational activity that takes place within

the traditional framework of the formal education system. The main distinguishing feature of NFE in India is its flexibility in terms of organization, scheduling, and duration of teaching and learning, customer groups, age group of learners, materials, methodology of instruction, and evaluation system. (UNESCO) and 3% in coaching classes. (Coaching classes are private educational institutes that provide classes in practically all subjects. They prepare pupils for specialized exams and tests. Coaching Center serves students desiring one-on-one connection and specialized education. Information about education qualification and teaching experience of the participants are provided in Table 3.3.

Table 3.3

Participants general information

Parameters	Information
Qualification of participants	41% B.Ed. Degree, 11% with an M.Ed. degree, 4.4% with a Ph.D. degree, 4.4% with an MA degree, 2.2% with an M.Sc. degree, 35% with other degrees, and 3% qualified with a D.Ed. degree
Teaching experience	49% of them had more than 10 years, 3% had 9-10 years, 17% had 4-8 years, 15% had 2-4 years, and 15% had 1-2 years
Teaching experience in inclusive school	36% of them had more than 10 years, 3% had 9-10 years, 15% had 4-8 years, 17% had 2-4 years, and 28% had 1-2 years
Working as	30% were primary teachers, 34% were secondary teachers, and 36% were higher secondary teachers.

Materials used

The finalized questionnaire, based on the validation of the questionnaire (Phase 2) and the pilot study (Phase 3), was used to collect the data from teachers. The finalized questionnaire was converted into a Google form, and a link was generated for easy circulation.

Procedure

An e-survey method was used to collect the data from regular school teachers**.** The participants were contacted by visiting the school or over the phone to explain the purpose of the study and get the consent form signed. Participants who connected by phone had their consent mailed to them. Participants' e-mail addresses and phone numbers were collected directly from the teachers or the school, and the Google link was shared via e-mail or WhatsApp. Personally, three schools were visited for data collection, with prior permission for the presence. The Google form was sent to all the participants via WhatsApp. Every alternate day reminders were sent to the participants.

Data Analysis

The collected responses were downloaded as a Microsoft Excel sheet. The percentage of participants selecting a particular option was calculated for closed-ended (multiple-choice or polar) questions. The answers were grouped for open-ended questions, and then the percentage of participants in each group was calculated. The analyzed data were represented graphically and discussed.

To find out the percentage of regular teachers having awareness about AAC in general, AAC systems used in schools, and the government facilities and schemes for children with special needs and AAC, the questions in Part B (AAC awareness & government policies) of the questionnaire were first segregated into three categories as

per the objectives of the present study. The responses for each question were provided a score of ‘ONE or TWO’ for the presence of high awareness and knowledge about AAC, ‘ONE’ with moderate level of awareness and knowledge and ‘0’ for no awareness and knowledge based on the questions and their options. For example, for the question ‘are you familiar with the terms Augmentative and Alternative communication? ‘the options provided were yes/no. For the response ‘yes’, a score of ‘ONE’ was provided and for ‘no’ a score of ‘ZERO’ was provided. Questions such as, "Are you aware of any government policies related to education for children with special needs?" For that, the options were Sarva shiksha abhiyan (SSA), National Education Policies (NEP), Inclusive Education of Disabled at the Secondary Stage (IEDSS), and No Idea. Those who chose more than two or three options received a score of two, those who chose less than two and only one option received a score of one, and those who chose no idea received a score of zero.

Then, each participant's total score of awareness and knowledge was calculated by adding a score for each question. Later, each score was converted into a percentage. Based on Bloom 1956 cut-off score for awareness and knowledge, those who score ≥80% were considered to have high awareness and knowledge, 50% – 79% were considered to have moderate awareness and knowledge, and ≤50% to have no or least awareness and knowledge about AAC, AAC systems in schools and government facilities, policies and schemes. These results were represented graphically.

CHAPTER IV

RESULT AND DISCUSSION

This section summarizes the research findings of the present study that sheds light on regular teachers' awareness and knowledge about AAC in inclusive education set-up. The results have been reported and discussed under the following phases.

Phase 1 – Development of a questionnaire

The questionnaire was developed after a few brainstorming sessions and based on the literature review. The developed questionnaire had two parts, A and B, where questions of Part B tapped the objective of the study; hence, a literature base and/or reason for the same has been provided in table 4.1. This also aids in validating the content of the questionnaire.

Table 4.1

Literature base of the questions included in the questionnaire

Questions	Evidence
Are you aware of the term Augmentative Alternative communication?	The Indian Government provides a few AAC systems to all the inclusive schools in India in order to provide good education to children with special needs. (NEP, 2020) (National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities Act 1999) B.Ed. and M.Ed. curriculum for regular teachers include topics related to children with special needs and what modifications to be made while teaching them in an inclusive classroom set-up. Generally, regular teachers are a part of team in inclusive schools along with special educators in using the AAC

	systems. Their knowledge about the terminology, AAC becomes important to communicate with special educators, resource or shadow teachers. (B.Ed. 2015-2016)
Which are the following professionals available at your school to help children with special needs?	Parents, classroom teachers, special educators, speech-language pathologists, assistive technology experts, and support staff all play key roles in teaching and supporting a variety of communication and language abilities in classrooms. A collaborative team approach can address the challenges that children with disabilities face by providing a framework for educators, allied health professionals, and parents to share expertise in constructive problem-solving and co-design of support measures. Collaboration has been offered as a best practice approach to support students with disabilities to achieve the best educational outcomes (Friend & Cook, 2017). Regular teachers being one of the main team members, must be aware of other team members.
Are you aware that children with communication disorders can utilize Augmentative and Alternative communication like sign language, pictures, books, computers, and communication Apps to improve communication in their daily lives?	The ability to communicate wants and requirements effectively and efficiently and actively participate in social exchanges can promote quality of life and independence (Chan & Zoellick, 2011). Communication fosters social proximity, or interactions between people marked by pleasant exchanges, mutuality, sharing, and mutual satisfaction (Howes, 1983). When a child fails to communicate verbally, other modes of communication are being used to improve communication. Whether, regular teachers have awareness and knowledge that pictures, books, computers etc., can be used to communicate in daily routine

	might help them to implement it better in the natural situation at home.
Did you know these other modes of communication, like sign language, pictures, symbols, communication books, computers, and communication Apps, could also aid in classroom communication and learning?	Several researchers believe that AAC can potentially alter students' lives with complex communication requirements (e.g., Beukelman & Mirenda, 2005; McNaughton et al., 2008). In addition, usage of AAC in classrooms have been reported to enhance possibilities for social contact, access to peer models to support academic achievement and positive behaviors, and language skill improvement (Beukelman & Mirenda, 2012; Calculator, 2009; Finke et al., 2009).
Do you think Augmentative and Alternative communication will help children with special needs perform better in their curriculum?	Speaking especially about speech-generating devices (SGDs), Leatherman and Wegner's (2022) investigation focused on the practises as well as observations of educators who instruct pupils using Augmentative and Alternative Communication (AAC). They observed that special needs children performed better during school. According to research studies, both traditional and special education teachers are crucial for maximising the achievement of children who use AAC (Cumley & Beukelman, 1992; Giangreco, 2000; Mukhopadhyay & Nwaogu, 2009; Patel & Khamis-Dakwar, 2005), as they can give pupils additional chances for interaction with AAC. Hence, it becomes important to know whether regular teachers are aware of the positive outcomes of using AAC in classrooms.
Have you received any training in using Augmentative and Alternative communication in and outside the	Research reports reveal that while implementing AAC for students with special needs in schools, regular teachers and special educators are facing

classroom for children with special needs?	challenges due to lack of knowledge, guidance, inadequate training (Baxter *et al.* 2012; Chung and Stoner 2016). Regular teachers in inclusive education set-up need to be trained to use the AAC systems to teach as well as to communicate with children with special needs in classrooms. This would help in effective communication as well as learning in the classroom.
Children with special needs are enrolled in your school.	Children's Right to Free and Compulsory Education (RTE) Act, 2009, a significant legislation under Article 21-A, states that every child has a right to full-time elementary education of satisfactory and equitable quality in a formal school that meets certain essential norms and standards. Regular teachers first must be aware of the presence of children with special needs to cater them better.
What type of children with special needs have you seen in your classroom?	According to SSA (2001) and NEP (2020) every child irrespective of their disabilities have the right to be educated indicating "zero rejections". Further, the government Scheme of Inclusive Education for Disabled Students at the Secondary Stage (IEDSS, 2009-10) aids in the inclusive education of children with hearing impairment, intellectual disability, autism, cerebral palsy, speech impairment and learning disabilities in grades IX-XII.

Phase 2 – Validation of the questionnaire

The developed questionnaire was sent to eight SLPs for content validation. They were asked to validate the content of each question on the parameters, relevance,

simplicity, clarity, and ambiguity on a 4-point rating scale. The results of the same are reported in table 4.2. Table 4.2 indicates that majority of the experts rated the questions to be clear, relevant, simple and less ambiguous.

Table 4.2

Numbers of expert rating on parameters relevance, simplicity, clarity, and ambiguity

Questions	1&2	3&4
What is your Qualification	Ambiguity – 1	Relevance - 8 Clarity- 8 Simplicity -8 Ambiguity -7
Which is your working setup	Ambiguity- 2	Relevance -8 Clarity-7 Simplicity -8 Ambiguity -6
How many years of teaching experience	Ambiguity – 1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity-7
Are you working as	Ambiguity -1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity-7
How many children are there in your classroom?	Ambiguity -1	Relevance -8 Clarity-8 Simplicity -8 Ambiguity-7
Are you enrolled children with special needs at your school?	Clarity-1 Simplicity-1 Ambiguity -2	Relevance -8 Clarity-7 Simplicity -7 Ambiguity-6
If yes, what type of children with special needs have you seen in your classroom?	Ambiguity – 1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity-7
Do you have a special educator in your school setup?	Ambiguity - 1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity-7
If yes, how many are available, and what role do they play in the classroom?		Relevance-8 Clarity-8 Simplicity-8

		Ambiguity-8
Are you aware children with communication disorder can utilise other modes of communication like communication books, sign language, computers	Clarity – 1 Ambiguity – 1	Relevance -7 Clarity-8 Simplicity-8 Ambiguity-7
Did you know these other modes of communication like sign language, pictures, symbols, pictures, communication books, computers, handheld devices, could be used in classroom setups?	Ambiguity – 1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity-7
Are you familiar with the communication aids like pictures, symbols, and other AAC tool available for children with special needs?	Clarity -1 Simplicity-1 Ambiguity – 2	Relevance -8 Clarity-7 Simplicity-7 Ambiguity-6
If yes, mark the options.		Relevance -8 Clarity-8 Simplicity-8 Ambiguity-8
Name What all government policies you know for children with special needs in school setups?	Ambiguity – 2	Relevance -8 Clarity-8 Simplicity -8 Ambiguity-6
Are you familiar with which the government provides assistive aids for children with special needs in school setups?	Clarity -1 Simplicity-1 Ambiguity – 1	Relevance -8 Clarity-7 Simplicity-7 Ambiguity -7
If yes, mark the options.		Relevance -8 Clarity-8 Simplicity-8 Ambiguity -8
Do you know about what facilities are followed by the government in school setup?	Relevance – 2 Clarity-3 Simplicity- 2 Ambiguity- 3	Relevance -6 Clarity-5 Simplicity-6 Ambiguity-5
If yes mark options	Relevance-2 Clarity-2 Simplicity-2 Ambiguity -2	Relevance -6 Clarity-6 Simplicity-6 Ambiguity-6
List the communication aids that you use with children with special needs during class	Relevance -1 Clarity-1 Simplicity-1 Ambiguity -2	Relevance-7 Clarity-7 Simplicity-7 Ambiguity-6

Have you received any training in using communication aids in a classroom with children?	Ambiguity -1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity -7
If yes specify the name and place of training	Ambiguity – 1	Relevance -8 Clarity-8 Simplicity-8 Ambiguity -7
Are you using any available Indian communication apps in the classroom?	Relevance –1 Clarity -1 Ambiguity -1	Relevance -7 Clarity-7 Simplicity-8 Ambiguity -7
Do you think every child with special needs can utilize communication aids in a classroom?	Relevance – 1 Ambiguity-1	Relevance -7 Clarity-8 Simplicity-8 Ambiguity -7
Do you think that after using communication aids in the classroom, children with special needs perform better in their curriculum as well as it is easy for you to communicate?	Relevance-1 Ambiguity- 1	Relevance -7 Clarity-8 Simplicity-8 Ambiguity -7

The content validity index was checked based on the scores of relevancy parameters only. The scores of relevancies and the calculated CVI for each question, has been provided in table 4.3.

Table 4.3

CVI calculation

Questions	E-1	E-2	E- 3	E- 4	E- 5	E- 6	E-7	E- 8	Experts in agreement	I-CVI	UA
1. Highest education qualification	4 (1)	4 (1)	4 (1)	3 (1)	3 (1)	4 (1)	4 (1)	4 (1)	8	1	1
2. What is your working setup	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	8	1	1
3. Years of teaching experience	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	8	1	1
4. Years of teaching experience in inclusive school	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	4 (1)	4 (1)	8	1	1
5. Are you working as	3 (1)	3 (1)	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	8	1	1
6. A total how many children are there in your classroom	4 (1)	3 (1)	3 (1)	4 (1)	4 (1)	3 (1)	3 (1)	4 (1)	8	1	1
7. Are you aware of children with special needs	4 (1)	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	4 (1)	8	1	1
8. Does your school enrol children with special needs	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	8	1	1
9. If yes, what type of disabilities have you seen your class	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	8	1	1

10. Which are the following professionals available in your school to help children with special needs?	4 (1)	4 (1)	3 (1)	4 (1)	3 (1)	4 (1)	1 (0)	4 (1)		7	0.875	0
11. What are the roles of resource teachers in inclusive schools with respect to special child?	4 (1)	4 (1)	3 (1)	4 (1)	3 (1)	4 (1)	4 (1)	4 (1)		8	1	1
12. What are the roles of special educators in inclusive schools with respect to special child?	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)		8	1	1
13. What are the roles of shadow teachers in inclusive schools with respect to special child?	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	3 (1)	4 (1)		8	1	1
14. Are you aware of term Alternative and augmentative communication?	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)		8	1	1
15. Which are the followings comes under Alternative and Augmentative communication?	4 (1)	4 (1)	3 (1)	4 (1)	3 (1)	4 (1)	2 (0)	4 (1)		7	0.875	0

16. Are you aware that children who cannot speak or have minimal speech can utilize Augmentative and Alternative communication to communicate in their daily as well as in classroom for learning?	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	8	1	1
17. Are you aware of AAC system available in your school?											
18. Do you know how to use AAC system like picture, symbols, communication tools/ device/ apps available for children with special nees at your school?	4 (1)	4 (1)	2 (0)	4 (1)	3 (1)	1 (0)	3 (1)	4 (1)	6	0.75	0
19. Are you aware of this AAC system provided by government in your school?	3 (1)	3 (1)	4 (1)	4 (1)	3 (1)	1 (0)	2 (0)	4 (1)	6	0.75	0
20. Mark the option which all AAC tools provided in your school	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	2 (0)	4 (1)	7	0.875	0

21. Have you received any training in using Augmentative and Alternative communication in classroom as well as outside of the classroom for children with special needs	4 (1)	4 (1)	3 (1)	4 (1)	3 (1)	4 (1)	4 (1)	2 (0)		7	0.875	0
22. If yes specifiy training name and place	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	4 (1)	1 (0)	4 (1)		7	0.875	0
23. Do you think using AAC system will help children with special needs perform better in their curriculum												
24. Are you aware of government Act for children with special needs	4 (1)	4 (1)	4 (1)	4 (1)	3 (1)	4 (1)	2 (0)	4 (1)		7	0.875	0
25. Mark which all government facilities are you familiar with	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	1 (0)	4 (1)		7	0.875	0
										S-CVI/Ave	0.97	
Proportion relevance	1	1	0.95	1	1	0.91	0.66	0.95		S- CVI/UA		0.58
Average proportion of items judged as relevance across the eight experts										0.93		

Based on the CVI calculation, it was found that the S-CVI/Avg (S-CVI/Ave = sum of I-CVI scores/number of items) of eight professionals for 24 questions was 0.97, meeting the satisfactory level of agreement, 0.83 (Lynn (1986). It was also found that Universal agreement (Universal agreement (UA) score is given as '1' when the item achieved 100% agreement by the experts. The UA score is zero for questions 10,15,17,18,19,20,21,22,23, and 24, as not all the experts agreed. Accordingly, based on the UA score and the suggestions provided by the experts, these questions were reframed and reordered. The checklist was then, finalized and converted into a Google form to circulate among the participants of the pilot study.

Phase 3 – Pilot study and finalization of a questionnaire

Twelve regular teachers (3 per school) from four English medium inclusive education schools participated in the pilot study. The validated questionnaire was circulated among participants. Along with this, teachers were also asked to provide feedback about each question on a 4-point rating scale for the parameters, clarity, simplicity, and ambiguity. All participants rated the questions to be clear and simple. Hence, the validated questionnaire was retained as the final one and no modifications were made based on the results of the feedback received from the pilot study.

Phase 4 – E- survey

The results have been represented either in the form of pie charts or bar graphs. The results of the e-survey carried out using the finalized questionnaire (Appendix I) has been reported and discussed under the following headings:

I. Awareness and knowledge of regular teachers about children with special needs and professionals involved in helping them in classroom set-ups

This section reports and discusses the results under two sub-headings:

a) Awareness and Knowledge of regular teachers about children with special needs

b) Awareness and Knowledge of regular teachers about the professionals involved in helping children with special needs in the inclusive classroom.

a) Awareness and Knowledge of regular teachers about children with special needs

The results related to the awareness and knowledge about the presence of children with special needs, types of children with special needs, and the number of children with special needs are reported as well as discussed here.

Figure 4.1 shows that 95% of the participants were aware of the children with special needs. On the other hand, 5% were unaware of the children with special needs.

Figure 4.1

Awareness of children with special needs.

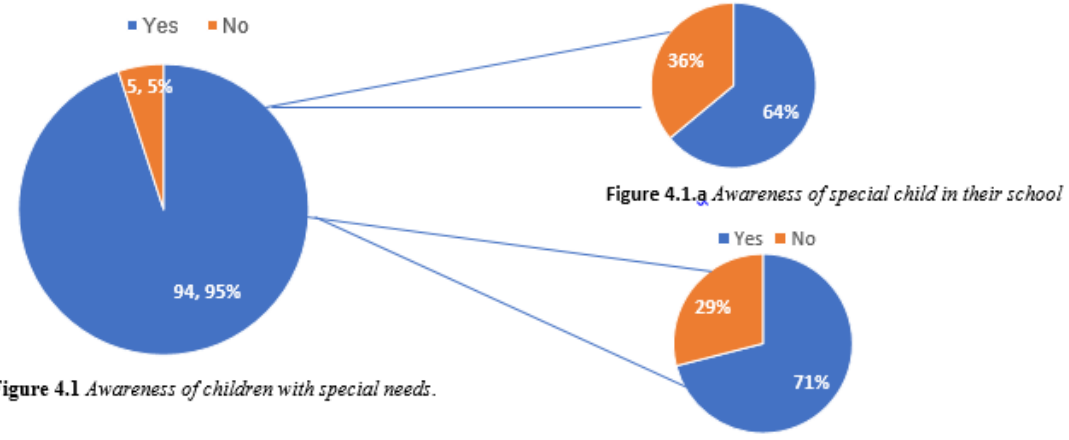


Figure 4.1 *Awareness of children with special needs.*

Figure 4.1.a *Awareness of special child in their school*

Figure4.1.b *School enrolled children with special needs*

Majority of the teachers are aware about children with special needs as the B.Ed. and M.Ed. curriculum has information about them (*syllabus of bachelor of education, (*2016), (*syllabus of master of education*, (2016). Historically, children with special needs were neglected and excluded from mainstream school environments. In the recent

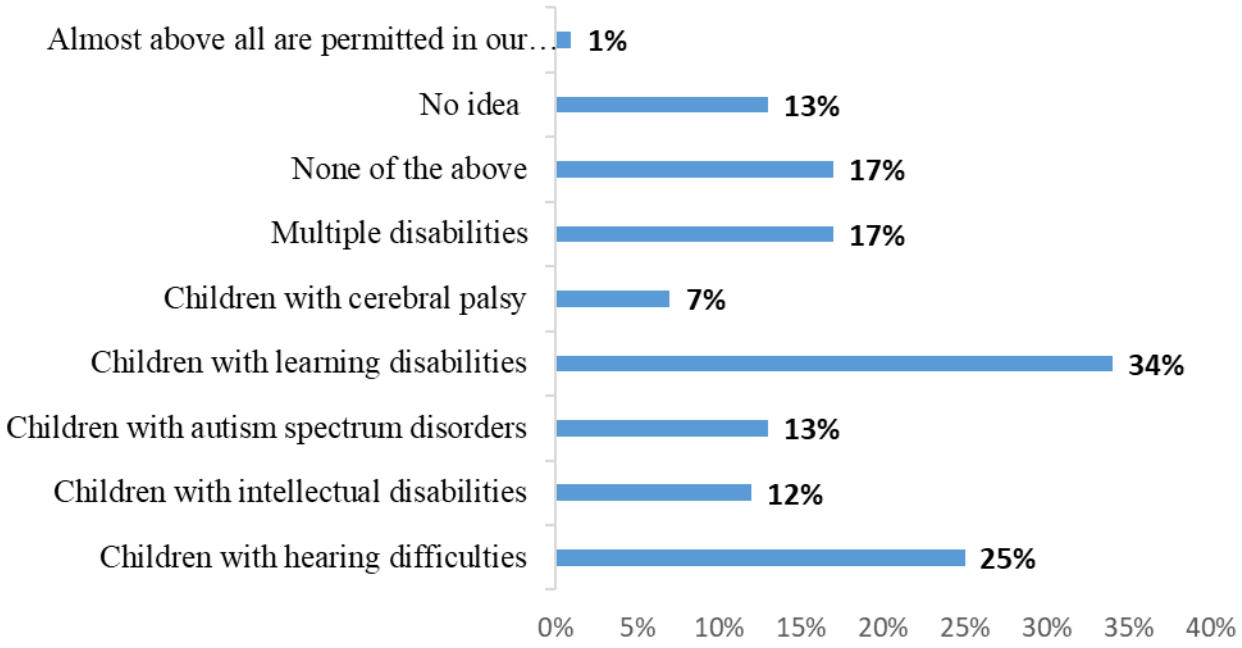
years, there has been an increasing awareness of the significance of inclusive education for children with special needs. In response to this growing knowledge, the Bachelor of Education (B.Ed.) curriculum has undergone significant modifications to incorporate and include the concepts of inclusion. The curriculum provides future educators with the information, abilities, and attitudes necessary to fulfill the diverse needs of students. Inclusive education ensures that all students, regardless of abilities or impairments, have equal access to a high-quality education. It values and respects the diversity of learners and seeks to provide an enriching educational experience for every child.

In addition, amongst 95% of those who have reported to be aware, 64% of them report to have children with special needs in their inclusive classroom and 36% of them report not to have (Figure 4.1a). In addition, most of them were aware of their school enrolling such children as well (71%) (Figure 4.1b). However, 29% of them were unaware about it. On the other hand, those who had reported to be unaware of children with special needs had no idea about their school enrolling such children as well they reported of not having any such children in their classroom.

Further, based on the participants responses it is noted that amongst the children with special needs in the classroom, majority of them had learning disability (34%) followed by children with hearing impairment (25%), children with multiple disabilities (17%), children with autism spectrum disorder (13%) and children with intellectual disability (12%). Least percentage of children who were reported to be enrolled in the class were children with cerebral palsy (7%) (Figure 4.2).

Figure 4.2

Types of children with special needs enrolled in the classroom



Literature review indicates that in every averaged-sized class, there are five students with learning disability (Thomas et al., 2003). Dyslexia has been found to be the most common condition amongst the children with learning disability (Karande et al., 2005) and dyscalculia is found to encompass 6% of all school-aged children (Ramaa & Gowramma, 2002). Karande et al. (2007) documented the clinical profile and academic history of children with specific learning disabilities. They discovered that they face educational problems such as difficulties in writing (96%), inattentiveness (96%), and difficulties in mathematics (74%), hyperactivity (68%), and difficulties in reading (60%). They discovered that all the children in their study had low academic performance, and approximately 40% of the sample exhibited violent or withdrawn behavior. All these literatures indicate that teachers are more aware of learning disability as it is related to the difficulty in reading and writing. In addition, awareness

about the same has been created through movies, which acts as a major medium to reach the public. Hence, most of them might have reported about it.

Further, according to the Census of India (2011), 66% of children with hearing impairment in India were attending school. This indicates that this population is one among those who attend regular schools when compared to children with other disabilities. Hence, this might have stood second in line in the current study followed by multiple disabilities and autism that are gaining more awareness in the recent days. A study by Shetty and Rai (2014) reported that 95.7% of the regular teachers who participated in their study were aware about autism.

Based on National service scheme (NSS) data, the World Bank (2007: 64) report declares unambiguously that it is evident that both the educational attainment of all PWD (Persons with Disabilities) and present attendance of CWD (Children with Disabilities) are very low and considerably below national averages." According to research, people with disabilities have significantly lower educational achievement rates, with 52% illiteracy compared to a 35% average for the general population. Illiteracy rates are high across all disability categories, particularly for children with visual, multiple, and mental problems (and those with severe disabilities across all categories). The census of India (2011) also reports on similar lines. NSS 58th round (July-Dec. 2008), 25% of the literate population of individuals with disabilities had received education up to the primary level (five years of schooling), and 11% completed education up to the middle class (eight years). Just and just 9% had acquired education for nine years or more.

A few of the teachers have also reported that none of the children with special needs have been enrolled in their school. The possibilities can be two, with either, some

schools might not be accepting children with special needs though schools are inclusive or the regular teachers are unaware about it. This can be attributed to the fact that in India, the implementation of inclusive education is facing difficulties due to the lack of understanding, insufficient resources, infrastructure, concerns about classroom dynamics, parental preferences, assessment, and placement challenges. Kaushik (2018) found that more than 80% of the resource teachers faced difficulties to act as facilitators for admission of children with special needs in inclusive schools. This was reasoned out to be because of lack of understanding, lack of training of professionals, insufficient resources, infrastructure, concerns about classroom dynamics, parental preferences, assessment, and placement challenges. A recent study reported that one of the main barriers related to this is the presence of lack of emotional supports from teachers at school (Dafiah et al., 2020).

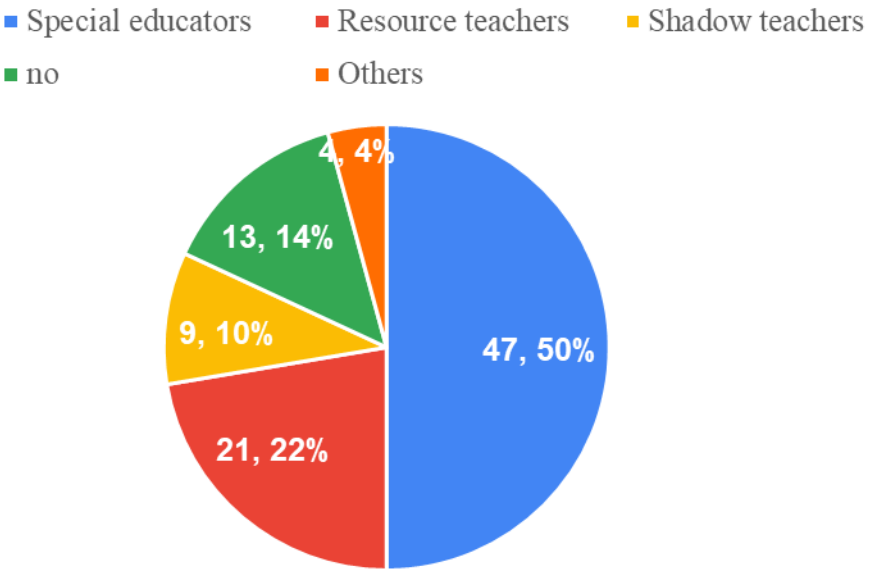
b) Awareness and Knowledge of regular teachers about the professionals involved in helping children with special needs in the inclusive classroom.

In this section, results related to the awareness and knowledge of regular teachers about the professionals (special educators, resource teachers and shadow teachers) involved in helping children with special needs in the inclusive classrooms have been reported and discussed. Also, awareness and knowledge about the roles of these professionals have been reported and discussed.

Out of 100 participants, 50% reported that special educators are available at their school; 22% reported of resource teachers, 10% about shadow teachers, 4% about other professionals (speech-language pathologists) being available at their respective schools. Further, 14% had no idea about the team of experts involved in serving students with special needs in inclusive classrooms (Figure 4.3).

Figure 4.3.

Type of professionals available at schools to help children with special needs



A collaborative team approach plays a very important role in inclusive education and it has been proven to be the best practice approach to support children with special needs for optimal educational outcomes (Friend & Cook, 2017). A team should include not only the educational staff and parents of children with special needs but also allied health professionals (Iacono et al., 2020).

An inclusive school relies on a multidisciplinary team of experts to establish an inclusive and supportive learning environment that fulfils the different needs of all students. This collaborative approach ensures that every student has the opportunity to attain their full potential and receive the support they need to succeed academically and socially. Regular teachers should be aware of the responsibilities of professionals involved in their schools in order to obtain advice from them and help children with special needs in the classroom. As can be seen (figure 4.4, 4.5, 4.6) above, teachers are aware of the roles of professionals (special educators, resource teachers, and shadow teachers). Most participants are aware of a few professional responsibilities, while

others are not. Special educators are trained to understand each special child's specific learning needs and challenges. They can adapt education and support to meet the student's academic, cognitive, emotional, or behavioural requirements, ensuring the child gets the help they need.

Figure 4.4

Awareness of responsibilities of resource teachers

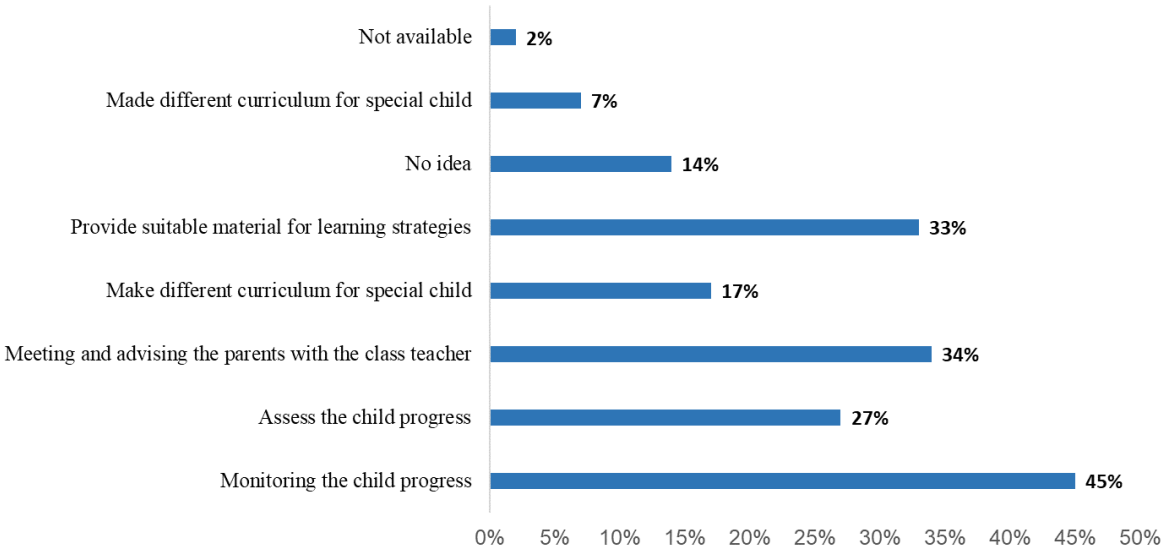


Figure 4.5

Responsibilities of special educators within inclusive school

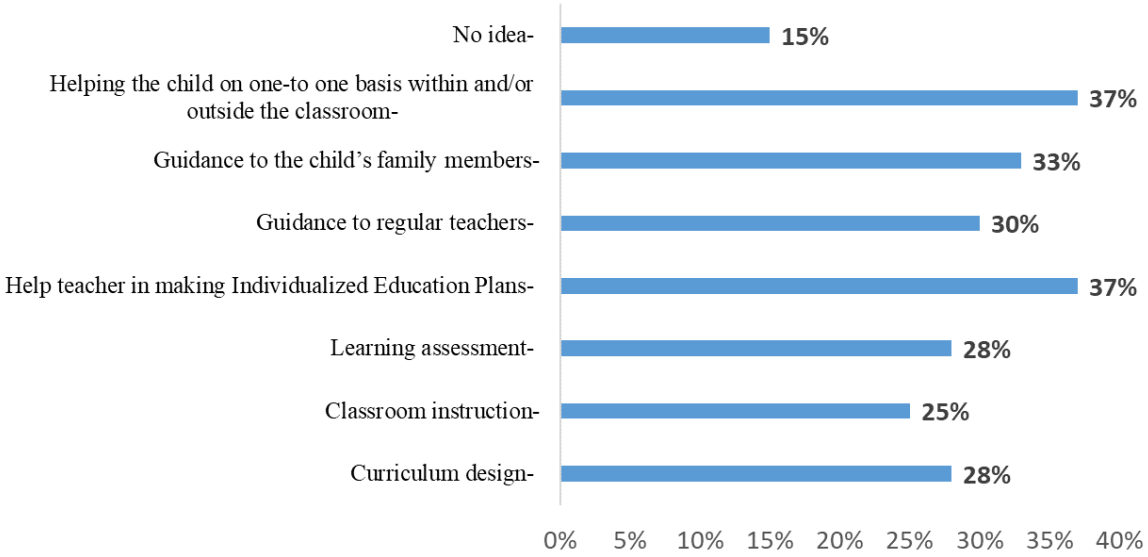
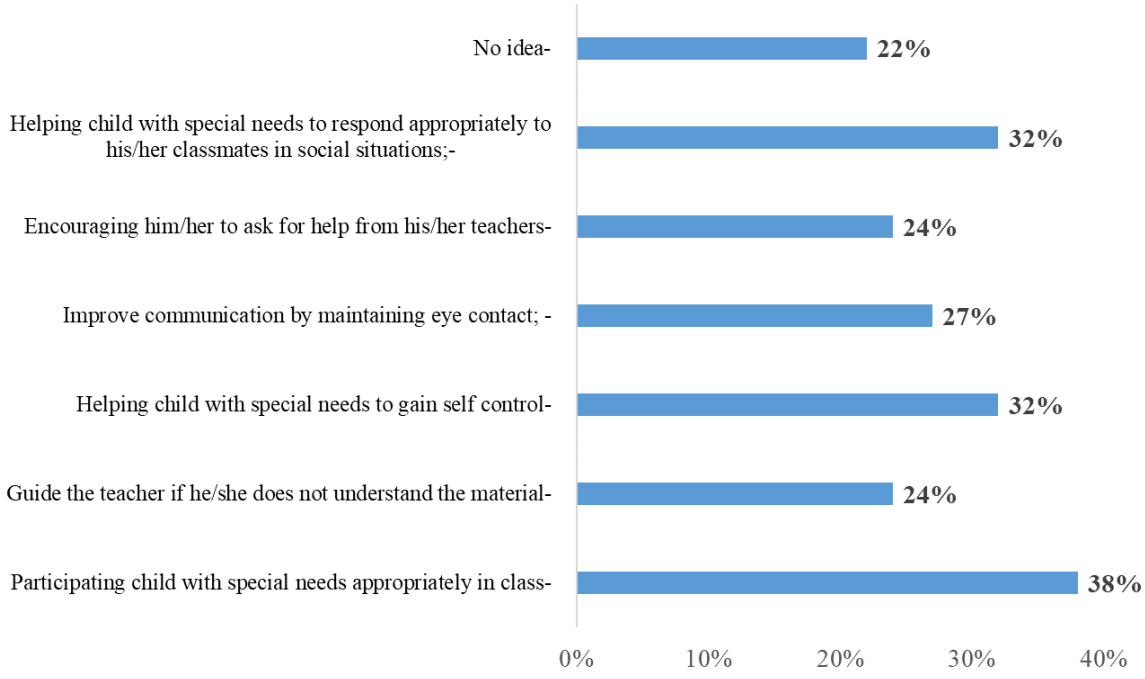


Figure 4.6

Responsibilities of shadow teachers in inclusive school



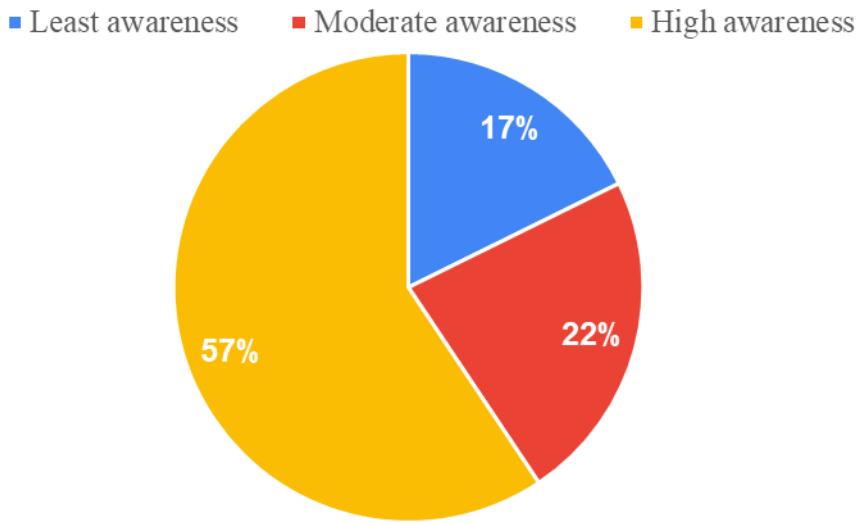
Our study results indicate that a few schools enrolled teams of professionals (special educators, resource teachers, shadow teachers, speech-language pathologists, physiotherapists, and occupational therapists) to help students with special needs. In contrast, some schools did not as they had no awareness about them. This can be attributed to the fact that, there is lack of knowledge about the professionals involved in the team, about their roles, collaborative design and implementation of support strategies in the classrooms (Vlcek et al., 2020).

2. Awareness and Knowledge of Regular Teachers about AAC in general

The overall percentage of level of awareness and knowledge of regular teachers about AAC in general was calculated based on Bloom's cut-off criteria (Score ≥80% were considered to have high awareness and knowledge, 50% – 79% were considered to have moderate awareness and knowledge, and ≤50% to have no or least awareness and knowledge about AAC). Accordingly, amongst 100 participants it was found that 57% had high awareness and knowledge, 22% had moderate awareness and knowledge, and 17% had least awareness and knowledge about AAC in general (Figure 4.7).

Figure 4.7

Awareness and Knowledge of Regular Teachers about AAC in general



It is found that more than 50% of the participants had high awareness about AAC in general. This can be attributed to the fact that though majority of them (57%) knew what AAC is (Figure 4.7) and 71% knew that it can used during daily and classroom communication and learning (Figure 4.8), and many of them were even aware about what are the various modes of communication that come under AAC. Among the participants, 46% were aware of sign language, 31% were aware of picture cards, 28% were aware of facial expressions, 24% were aware of gestures, 21% were aware of communication book/board, 23% were aware of communication apps, and 35% had no idea what constitutes AAC (Figure 4.9).

Figure 4.8

Awareness of AAC can utilise during classroom with children with special needs.

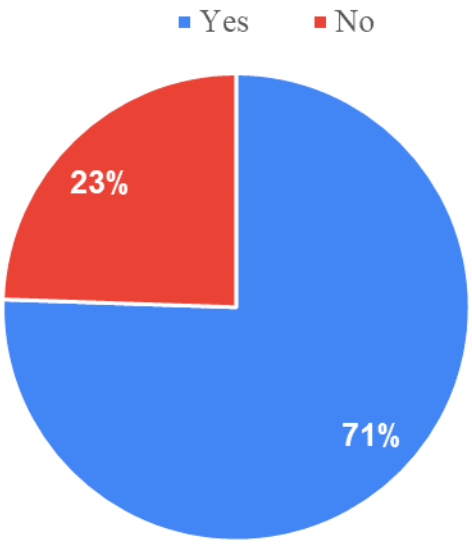
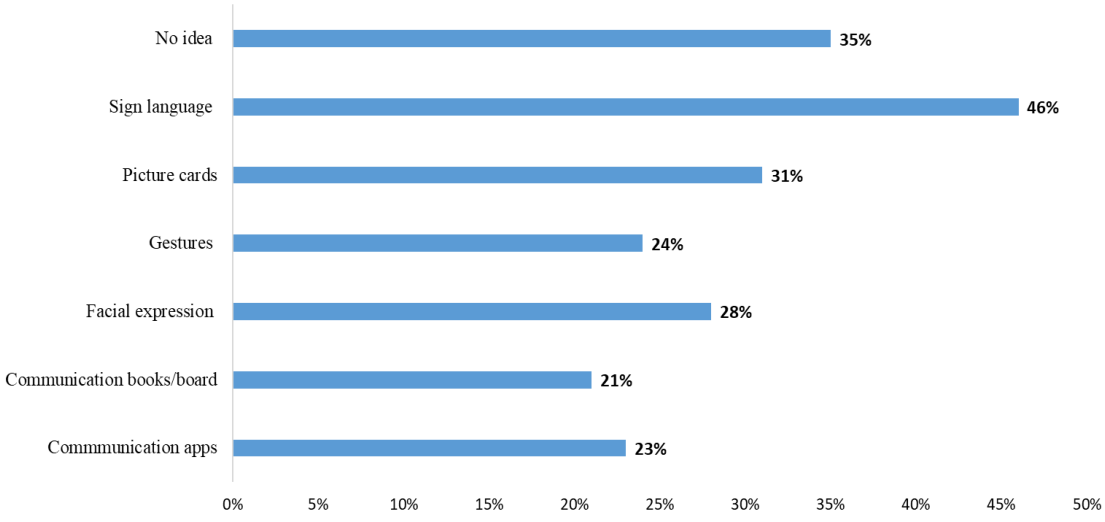


Figure 4.9

Awareness of various types of AAC



Majority of the teachers (41%) have an educational qualification of B.Ed. followed by 11% of them have M.Ed. qualification, 4% have Ph.D. and 3% have D.Ed. qualification.

The curriculum of B.Ed., M.Ed. and D.Ed. have information related to use of other modes of communication in the classrooms related to inclusive education (*Syllabus of bachelor education program*, 2016) (*syllabus of master education program, 2016*). The rest 37% of them have other degrees that are not related to teachers' education due to which they might have had no idea about AAC and what it constitutes. Another factor that can be attributed to these results is the presence of allied professionals in the inclusive classroom to help children with special needs to cope up. It is a known fact that inclusive education needs either a transdisciplinary or interdisciplinary approach due to which there is an exchange of information across the team members involved. Such a team collaboration might have led to an increase in the knowledge of regular teachers about AAC and what it constitutes. the inadequacy of efforts to influence teaching learning method (TLM) processes is acknowledged in the SSA documentation (SSA, 2007: 6), where it is noted that "classroom practices and teaching methods adopted by teachers for effective classroom management of CWSN" have been neglected, and it is critical to address these issues.

In addition to these, in the Indian context, there are still many prejudices existing regarding AAC that has led to difficulties in the acceptance of the same and implementation of the same. India is reevaluating special education teacher preparation and services for people with disabilities (Government of India, 1998). The Rehabilitation Council of India (RCI), formed under the RCI Act of 1992 (Ministry of Law, Justice, and Company Affairs, 1992) and its revision in 2000, regulates and maintains teacher and professional training programs in special education and allied rehabilitative domains. All professionals and workers who work with disabled children must complete RCI-registered training.

Currently, RCI recognizes over 250 centers and 56 long-term professional courses where professional courses and special education programs are offered (Giffard-Lindsay, 2007). Bachelor's degrees, master's degrees, postgraduate diplomas, and various short-term certificate courses are among the options. Despite the expansion of special schools in India, the situation regarding teacher training programs and teaching methodologies is mostly unknown. Communication issues can be viewed from numerous perspectives it affects every individual's life, and a lack of it impedes education, work, and training. In particular, nothing is known and/or published on communication interventions and AAC in India. Because education research is underestimated in India (Jangira, 1997; Panda, 1996), finding published experimental and academic research articles in international journals is difficult (Singal, 2005).

The key facilitators identified were connected to parental involvement and educator training. Several barriers to AAC use were identified among team members, including insufficient training, a lack of complete evaluation, insufficient planning time, and irregular AAC implementation (Andzik et al. 2017). Inadequate financial resources are another barrier to increasing the number of students who use AAC (Soto et al. 2001). This review of literature indicates that there are still regular teachers who have least awareness and knowledge about AAC, its constituents and its utility in classroom situations.

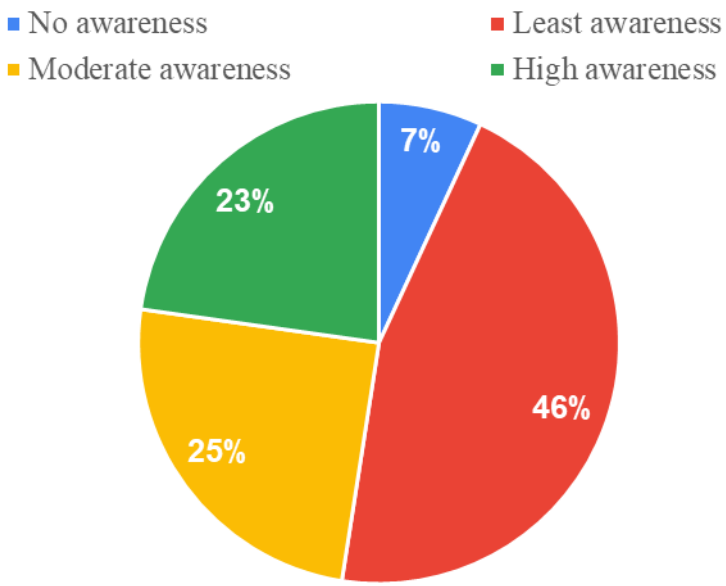
3. Awareness and Knowledge of regular teachers about various AAC aids/tools used in classrooms and how to use them

Based on Bloom’s cut-off criteria, only 23% had high awareness and knowledge, 25% had moderate awareness and knowledge, 46% had least awareness

and knowledge and 7% had no awareness and knowledge about various AAC aids/tools that can be used in inclusive classrooms and how to use them (Figure 4.10).

Figure 4.10

Awareness and Knowledge of regular teachers about various AAC aids/tools used in classrooms



These results can be ascribed to the responses provided by the participants for the survey questions related to the awareness of the availability of AAC systems in their schools, knowledge about how to use them in classrooms, attending training programs to learn how to use AAC in and outside classrooms and their belief about positive outcomes of using AAC in classrooms. Only 40% of the participants were aware of the availability of AAC systems in their school (Figure 4.11) and 62% were unaware of how to use the available AAC systems in the class (Figure 4.12). In addition, only 12% have received training regarding how to use AAC systems within and outside classroom situations.

Figure 4.11

Awareness of the AAC systems available at their school?

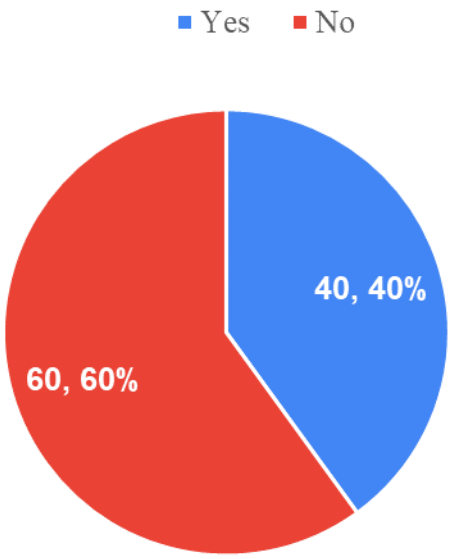


Figure 4.12

How to use available AAC system in class

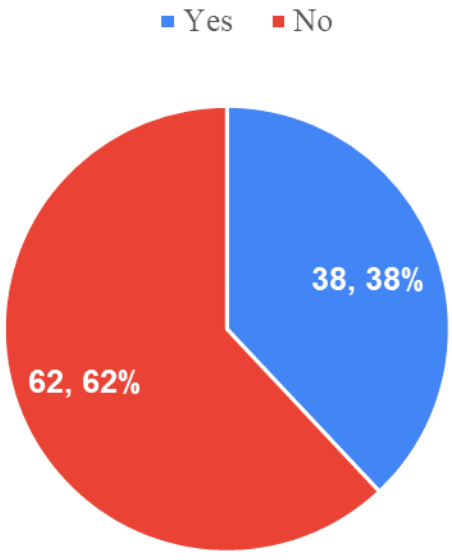
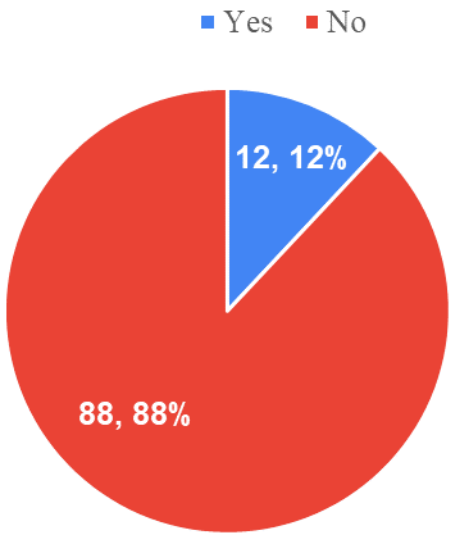


Figure 4.13

Regular teachers training on how to use AAC in classroom



The less awareness, knowledge, and training about the available AAC systems and their utility in classrooms can be attributed to the difficulties in implementing AAC systems in Indian inclusive schools (Figure 4.13). Saito, (2007) investigated barriers in implementing AAC in inclusive school for children with special needs is lack of knowledge and confidence among teachers to use to AAC. Similar lines (Mukhopadhyay & Nwaogu, 2009; Light & McNaughton, 2012) stated inadequate training of professionals to using AAC, lack of accessibility of service and lack of funding would be major obstacles for professionals to using AAC in classroom.

Kumar (2021) stated that teacher education programs in India are not as supportive of preparing teachers to work in inclusive schools. The arrangement of teacher education programs for normal students and children with special needs differs. National counselling for teachers education (NCTE) serves to all demands regarding recognition and monitoring of teacher training institutes in order to prepare teachers for general students, and Rehabilitation Counsel of India (RCI) provides to all needs

regarding recognition and monitoring in order to prepare teachers for children with special needs (CWSN). Due to the separated teacher training system, a single teacher cannot command all types of children. Those who receive training under NCTE rules and regulations are only qualified to teach ordinary students, while those who receive training under RCI rules and regulations are qualified to educate children with special needs. As a result, there is less opportunity for educating teachers in inclusive classrooms, because regular teacher education programs governed by NCTE do not address the actual requirements of children with special needs. The most serious difficulty and obstacle in educating teachers for inclusive schools in India is the segregated recognition and monitoring system of teacher training programs.

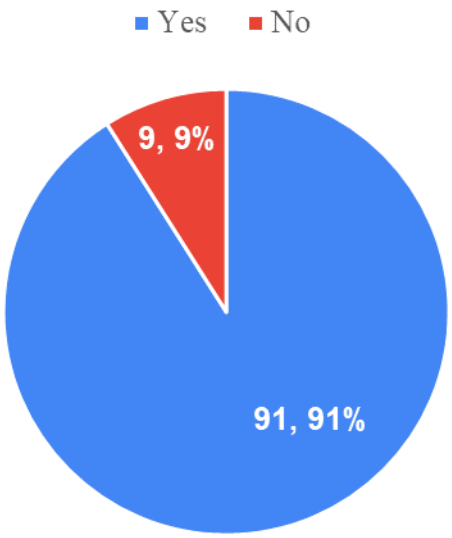
Further, Srinivasan and colleagues (2011) surveyed 18 special education teachers, speech language pathologists (SLPs), and behavior therapists in southern India regarding current AAC trends. According to professionals, AAC training was a significant component of communication interventions in their classroom environment (Srinivasan et al., 2011). Given the results of the study, the authors proposed that training should not be limited to speech-language pathologists or a single expert. Instead, all team members should receive AAC training. That is, special education teachers and all other service providers that engage with students with communication disorders could benefit from current AAC training, easily accessible training materials, and frequent practice, exchange of knowledge with other professionals in the field.

In addition, although the awareness and knowledge about AAC aids/tools available in their schools and their utility in classrooms was found to be less, 87% of the participants did report that AAC usage within classrooms will bring in a positive outcome in the education of children with special needs (Figure 4.14). This can be because majority of the participants are aware have some knowledge about AAC in

general, which has been reported in the results of the present study. This in turn can be attributed to their learning during B.Ed./M.Ed./D.Ed.

Figure 4.14

Awareness of AAC tools available in their school and their utility

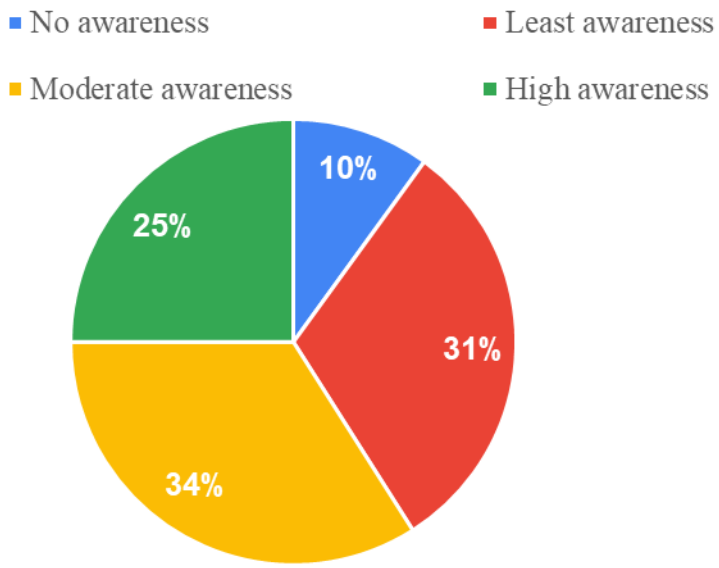


4. Awareness and Knowledge of Regular Teachers on various Government Policies and Facilities for the use of AAC in Inclusive Education

This section reports and discusses the results related to awareness and knowledge of regular teachers on government providing various AAC systems to inclusive set-ups and about them. Also, reports and discusses about awareness and knowledge of various government acts, facilities and policies related children with special needs and their education. Overall, based on the Bloom's cut-off criteria, 25% had high awareness and knowledge, 34% had moderate awareness and knowledge, 31% had least awareness and knowledge and 10% had no awareness and knowledge about government acts, policies, facilities related to children with special needs and their education (Figure 4.15).

Figure 4.15

Awareness and knowledge on various government policies and facilities



Relatively more percentage of participants were found to have moderate awareness and knowledge. This can be because only 34% of them were aware that government provides AAC systems to inclusive schools (Figure 4.16) and 57% had no idea about which are the AAC systems that are provided by the government (Figure 4.17). Further, not all were aware of all the government acts related to children with special needs as well as about the policies related to education of children with special needs that were provided as options. (Figure 4.18) shows that 38% of all participants were aware of The Rights of Persons with Disabilities (RPWD) Act 2016, 31% about the Person with Disability Act, 30% about National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities Act, 1999, 27% about National Policies for Persons with Disabilities 2006, 21% about Rehabilitation Council of India Act, 1992, and 33% unaware about government Act for children with disabilities. In addition, (figure 4.19) indicates that 60% were aware of national education policies (NEP), 54% were aware of Sarva Shiksha Abhiyan (SSA),

34% were aware of Inclusive education of the Disabled at the secondary stage (IEDSS), and 14% were unaware of government policies for the education of children with special needs.

Figure 4.16

Awareness of teacher's government provides AAC in their school.

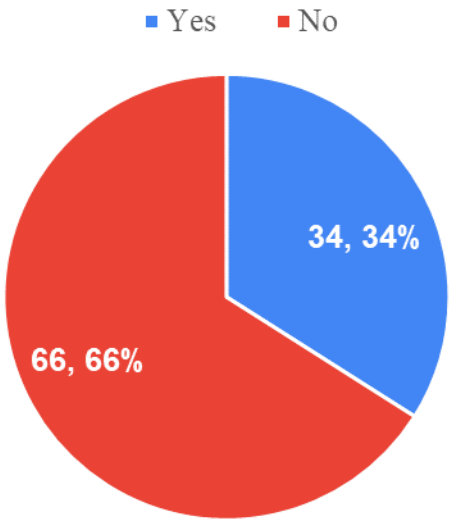


Figure 4.17

Awareness on which AAC provides by government in their school

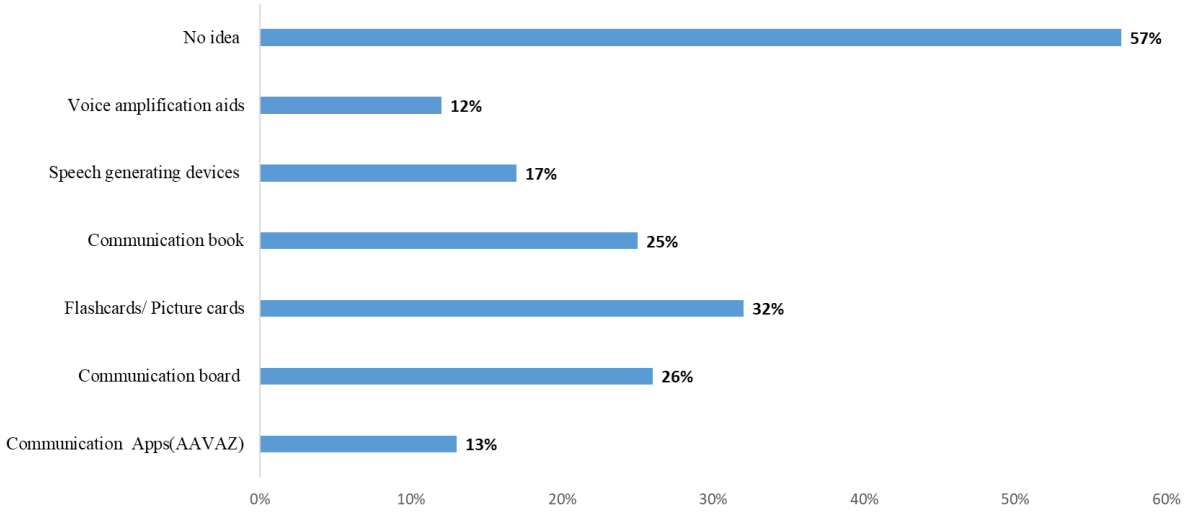


Figure 4.18

Government policies Awareness of the government's acts for children with special needs

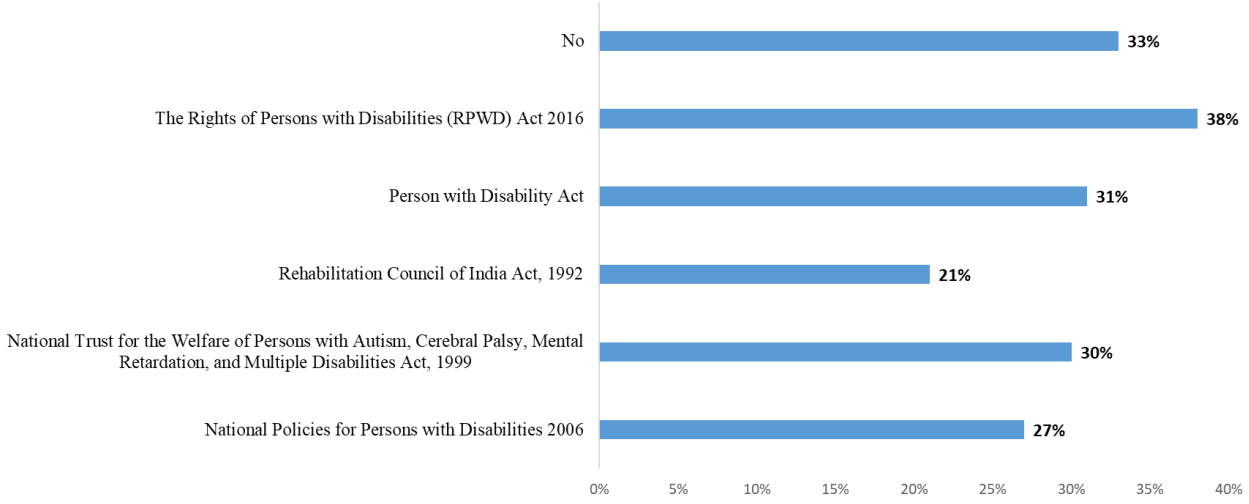
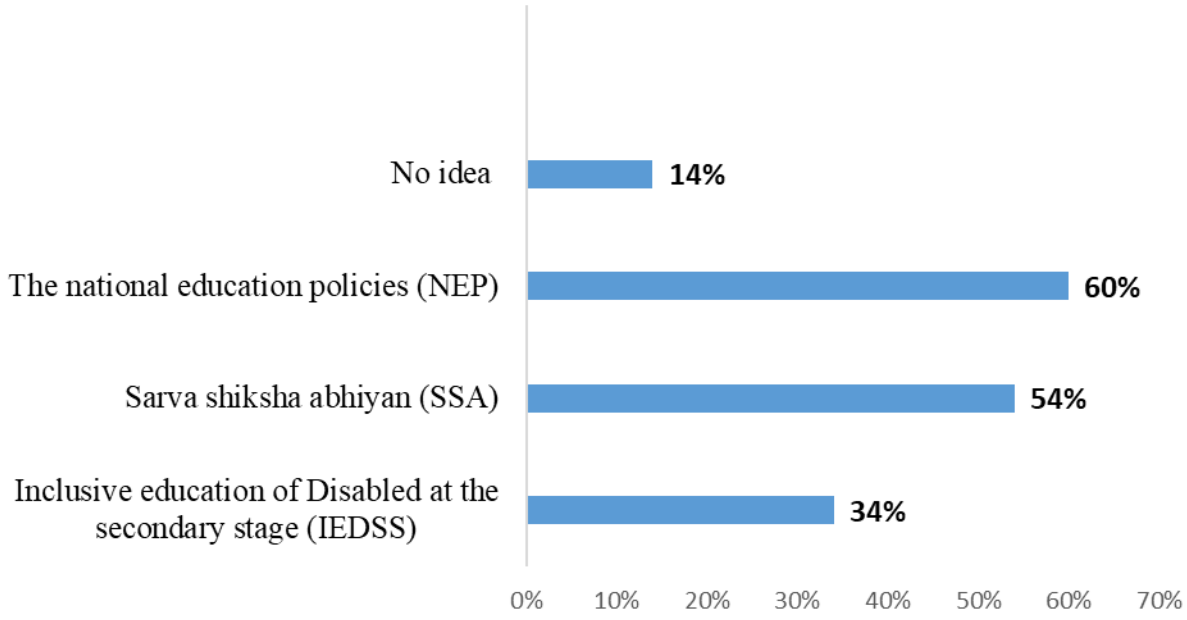


Figure 4.19

Government policies related to education children with special needs are you aware of.



A Bachelor of Education (B.Ed.) program's curriculum contains information about government acts and policies concerning children with disabilities. Teachers obtaining a Bachelor of Education (B.Ed.) degree should have a comprehensive awareness of government laws and guidelines pertaining to children with disabilities. This information is essential for developing inclusive and supportive learning environments. Here among the all participants most of them aware (B.E.d-41%, M.E.d 11%) of government act as their curriculum include the information about the same but 33% of them unaware of this government Act (figure 4.4.3) that can affects children with special needs to obtained quality of education and government facilities. Also, the lack of adequate teacher training program especially to be skilful in inclusive schools (Kumar, 2021; Sreenivasan et al., 2011) can also be attributed to this.

Usually, social workers and administrative staff members are the one to collect majority of information related to student, instead of regular teachers. Regular teachers are not primary professionals who know all the information of students. All the government facilities provided in school is mostly informed and collected by administrative staff of the schools. After receiving government facilities (assistive tools and other facilities) administrative staff will segregate among students based on their disability criteria hence regular teacher might have less knowledge of which government facilities government provides in their school for students with special needs.

In sum, the results of the present study reveal that still many teachers though working in an inclusive school does not know information related to AAC, its utility, about the training programs and government policies and facilities related to the same. Hence, the null hypotheses 1, 2, and 3 are partially accepted. The present results throw light on the major concern, lack of awareness and knowledge of regular teachers about AAC and its use in classrooms, that needs to be focused upon.

CHAPTER V

SUMMARY AND CONCLUSION

Augmentative and Alternative Communication (AAC) systems have emerged as important tools in supporting effective communication for those with limited or impaired verbal communication abilities in various settings like home, school, social gatherings and so on. At the school level, a team of professionals (including both educational and allied professionals) are involved in helping the child with special needs to cope up in the classroom situation. Amongst the professionals involved, regular teachers also play an important role and they are supposed to be aware and have knowledge of how to communicate and teach better in inclusive classrooms using the AAC systems. In India, as inclusive education is still in the budding stage, implementation of the same is facing various difficulties, one among which is awareness and knowledge of regular teachers about children with special needs, inclusive education and AAC support systems. This would in turn help in better learning and communication of children with special needs within the classroom by improving their quality of education life. Hence, this study was carried out to assess awareness and knowledge of regular teachers' about AAC in inclusive schools. The objectives of the present study were to 1) analyse the level of awareness and knowledge about AAC among regular teachers in general 2) investigate awareness and knowledge of various AAC aids/tools used in the classroom among regular teachers and 3) was to examine the awareness and knowledge of regular teachers on various government policies and facilities for the use of AAC in inclusive education. A descriptive survey method was used where 100 regular teachers from inclusive schools in and around Mysore and from other states served as participants. This investigation was conducted in four phases. Phase 1 involved development of the questionnaire, phase 2 was

involved content validation of the questionnaire, phase 3 involved pilot study and finalization of the questionnaire and phase 4 involved E- survey. The data was analysed and represented graphically using pie charts and bar graphs.

The first objective of study was to analyse the level of awareness and knowledge about AAC among regular teachers in general. The analysed data showed that the overall percentage of 57% of 100 participants had high awareness and knowledge, 22% had moderate awareness and knowledge, and 17% had little awareness and knowledge regarding AAC in general as depicted in figure (4.2).

The second objective of the study was to investigate awareness and knowledge of various AAC aids/tools used in the classroom among regular teachers. The data showed that only 23% had high awareness and knowledge, 25% had moderate awareness and knowledge, 46% had least awareness and knowledge, and 7% had no awareness and knowledge about any AAC aids/tools which can be utilized in inclusive classrooms.

The third objective of the study was to examine the Awareness and Knowledge of Regular Teachers on various Government Policies and Facilities for the use of AAC in Inclusive Education. The analyzed data showed that 25% had high awareness and knowledge, 34% had moderate awareness and knowledge, 31% had least awareness and knowledge and 10% had no awareness and knowledge about government acts, policies, facilities related to children with special needs and their education.

To summarize, it is found that the awareness and knowledge of regular teachers about usage of AAC for children with special needs and government facilities for those children with respect to AAC are not adequate. This can be attributed to the poor implementation of inclusive education as well as inadequate teacher training programs in these regards. Many of them have a little theoretical knowledge from their

educational qualification like B.Ed., M.Ed., or D.Ed. However, the practical application of the same still needs to climb a far way.

Clinical implication

- The results of the present study will aid speech-language pathologists in understanding the level of awareness and knowledge about AAC in school set-ups among regular school teachers.
- The study emphasizes the importance of comprehensive teacher training and professional development programs in inclusive schools. Teachers can be empowered to create a more inclusive classroom environment through workshops, seminars, and regular training sessions. This would, in turn, help the child with special needs to cope better with the curriculum and reduce negative psychosocial impact.
- The findings highlight the need to design specific communication plans for AAC students; Teachers can work with speech-language pathologists and other professionals to develop special communication techniques that meet the needs of each special student.
- AAC awareness among regular teachers encourages schools to allocate resources for AAC devices and content.
- Schools should ensure that classrooms have suitable technology and resources to support communication for children who require AAC. Furthermore, educators can modify classroom activities and instructional approaches to suit varied communication styles, producing a more inclusive learning environment.
- Teachers familiar with AAC can more effectively identify students who would benefit from early intervention. Collaboration with professionals can lead to early assessments and suitable actions.

Future directions

- This study collected majority of participants from only three states of India considering feasibility so generalization of current study findings to the regular teachers working in inclusive schools in other states may not be appropriate. Hence, future studies need to consider participants from across the country. This indicates the need of replication of this study on a larger sample size.
- Longitudinal research on teachers' awareness and knowledge of AAC over time may indicate growth patterns and the long-term influence of professional development programs. This may give light on the long-term viability of AAC methods in schools.
- Future research should investigate the relationship between teacher AAC skills and the academic, social, and emotional outcomes of students with communication disabilities. Understanding how teacher knowledge influences student development could encourage more teachers to invest in AAC education.
- Exploring how cultural and linguistic diversity affects teachers' knowledge and use of AAC is critical, as communication strategies may need to be customized for diverse cultural contexts and languages.
- Presence of the impact of teaching experience and education qualification in inclusive schools on the awareness and knowledge about AAC in depth.

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Appendix- A

Instruction – Here is a questionnaire to check your knowledge and awareness about use of Augmentative and Alternative Communication (AAC) systems in inclusive school. It has got two parts.

Part A includes questions related to general information about you and your school, and

Part B includes questions pertaining to your knowledge and awareness about AAC systems and different government facilities involved in procuring the same for children with special needs in your inclusive schools. Each question is provided with options. I kindly request you to read, and respond to all the questions

Demographic details – Name

Age

Current work place

PART A – General information

SR.NO	QUESTIONS
1	Highest education qualification A) D.Ed. B) B.Ed C) M.Ed. D) Ph.D. E) M.Phil
2	What is your Working setup A) Private school – aided B) Private school – unaided C) Government school D) Informal school E) Open school
3	Your teaching experience A) 1-2 years B) 2-4 years C) 4-8 years D) 9-10 years E) More than 10 years
4	Years of teaching experience in inclusive school A) 1-2 years B) 2-4 years C) 4-8 years D) 9-10 years E) More than 10 years
5	Are you working as A) Primary teacher

	B) Secondary teacher C) Higher secondary teacher
6	A total how many children are their in your classroom A) 20-40 children B) 40-50 children C) 50-60 children D) More than 60
7	Are you aware of children with special needs A) Yes B) No
8	Does your school enrolled children with special needs A) Yes B) No C) No idea
9	If yes what types of disabilities have you seen in your class? A) Children with hearing impairement B) Children with intellectual disabilities C) Children with Autism spectrum disorders D) Children with cerebral palsy E) Children with multiple disability F) None of the above G) No idea
10	Which are the following professionals available in your school to help children with special needs? A) Special educators B) Resource teachers C) Shadow teachers D) Others
11	What are the responsibilities of resource teachers in inclusive schools with respect to children with special needs? A) Monitoring the child progress B) Assess the child progress Meeting and advising the parents with the class teacher C) Make different curriculum for special child D) Provide suitable materials for learning strategies E) No idea
12	What are the responsibilities of special educators in inclusive schools with respect to children with special needs? A) Curriculum design B) Classroom instruction C) Learning assessment D) Help teacher in making individualized education plan E) Provide guidance to regular teachers and family members

	F) Helping the child on one-to one basis within and/or outside the classroom G) No idea
13	What are the responsibilities of shadow teachers in inclusive school with respect to children with special needs? A) Participants children with special needs in classroom B) Guide the teacher if he/she does not understand the material C) Helping child with special needs to improve self-control D) Improve communication by maintaining eye contact E) Encourage him/her to ask for help from teachers F) Helping special needs child to respond appropriately to his/ her classmate in social situations G) No idea

PART B - Includes question related to awareness and knowledge of Augmentative and Alternative communication and government facilities

SR NO	QUESTIONS
1	Are you aware of term Augmentative and Alternative communication? Yes No
2	Which of following comes under Augmentative and Alternative communication? A) Sign language B) Picture cards C) Communication books/boards D) Communication Apps E) Gestures F) Facial expression G) No idea
3	Are you aware that children who cannot speak or have minimal speech can utilize Augmentative and Alternative communication to communicate in their daily as well as in classroom for learning? A) Yes B) No
4	Are you aware of the AAC system that are available at your school? A) Yes B) No
5	Do you know how to use AAC system like picture, symbols, communication tools/ device/ apps available for children with special nees at your school? A) Yes B) No
6	Are you aware this AAC systems provided by government in your school? A) Yes B) No
7	Mark the options, which all AAC system are provided by the government to your school A) Communication book B) Communication boards C) Flash cards/ picture cards D) Speech generating devices E) Voice amplification aids F) Communication Apps (AAVAZ) G) No idea
8	Have you received any training in using Augmentative and Alternative communication in classroom as well as outside of the classroom for children with special needs A) Yes B) No

9	If yes specify name of training and place
10	Do you think using AAC system will help children with special needs perform better in their curriculum A) Yes B) No
11	Are you aware of government Act for children with special needs? A) Person with Disability Act The Rights of Persons with Disabilities (RPWD) Act 2016 B) National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities Act, 1999 C) Rehabilitation Council of India Act, 1992 D) National Policies for Persons with Disabilities 2006 E) No idea
12	Mark which all government facilities are you familiar with A) Identify disabilities at the school level and assess their needs B) Provision of aids, appliance and assistive devices C) Supplying appropriate teaching learning materials D) Barkha: A Reading Series for 'All.' E) Children with Autism in Primary Classrooms: Teacher's Handbook F) No idea

Appendix B

Consent form of participants

I, Karathiya Rinku student at All India Institute of Speech and Hearing, am conducting a study under the guidance of Dr. Amulya P Rao. As a part of my research study, I am checking the awareness and knowledge of Augmentative and Alternative Communication (AAC) among regular teachers in inclusive schools. As you, all are aware that as per Sarva Siksha Abhiyan (SSA) and National Education Policy (NEP) there is "zero rejection" of children from the education making provision for children with special needs to be enrolled in inclusive schools. According to these policies Government of India provides Augmentative and Alternative Communication (AAC) Systems like communication board, pictures, Avaz, the device to have better communication and learning in class for children with special needs.

I, ----------am willing to participate in the study and provide the information required. I am aware that the information provided would be used only for research purposes. The identity of the individual will be kept confidential, and your cooperation will be duly acknowledged.