

ROLE OF ASSISTIVE TECHNOLOGY IN IMPLEMENTING THE EDUCATIONAL RIGHTS OF PERSONS WITH DISABILITIES

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Abstract

Education is that weapon which is essential for the full development of human personality and to the strengthening of respect for human rights and fundamental freedom. Right to education has been recognised as a basic human right by the international instruments relating to human rights, noteworthy being “Article 26 of the Universal Declaration of Human Rights, 1948, Article 13 of the International Covenant on Economic, Social and Cultural Rights, 1966, the Convention on the Rights of Child, 1989.” So far as the Indian legislative scenario is concerned, the supreme law i.e the Constitution of India has provided for educational rights in the form of Fundamental Rights, Directive Principles of State Policy and Fundamental Duties. Apart from these provisions, relevant statutes that have guaranteed educational rights to the persons with disabilities are Rehabilitation Council of India Act, 1992, Rights of Persons with Disabilities Act, 2016 and the Right of Children to Free and Compulsory Education Act, 2009.

Assistive technology is the term used to include assistive products or devices and related services. Assistive devices may be numerous and depend on the nature of impairment. For mobility, assistive devices may be walking stick, crutch, wheelchair, artificial legs or hands, standing frame etc.; for vision, eyeglasses, magnifier, braille systems etc., for hearing, hearing aid, hearing loops etc.; so on and so forth. Access to assistive technology is regarded as a precondition to achieve equal opportunities, enjoying human rights and living with dignity. Hence assistive technologies play a crucial role even to implement the educational rights of persons with disabilities,

This paper seeks to analyse the meaning of persons with disabilities, various international and national legislative schemes of educational rights of disabled persons, meaning and different types of assistive technologies, how these assistive products help to exercise the educational rights of these special persons and it would conclude with the suggestions of the author.

Keywords: Assistive technology, assistive products, educational rights, persons with disabilities.

I. Prelude

“An important development in modern special education is the advent of assistive and adaptive technologies that teachers can use to help their students learn and achieve at the highest levels possible. The vast majority

of students with special needs do not have cognitive impairments. Many of these students can learn and perform as well as those without disabilities when given adjustments to certain aspects of their environment to accommodate for various physical disabilities. And educators can make

many simple accommodations for students with cognitive disabilities to similarly help maximize their learning in the inclusive classroom. Simple adjustments in the depth of information and how that information is presented can greatly aid a student who has difficulty with traditional teaching and assessment techniques.”¹

II. Notion of disability

WHO defines disabilities as “*Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus, disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives.*”²

The Planning Commission of India defines a disabled person to mean a person who is:

- i. blind;
- ii. deaf;
- iii. having orthopaedic disability; or

- iv. having neurological disorder;
- v. mentally retarded.

The definition includes any person who is unable to ensure himself/herself, wholly or partly, the necessities of a normal individual or social life including work, as a result of deficiency in his/her physical or mental capability.

The Convention on Rights of Persons with Disabilities in its Article 1 has stated that “Persons with disabilities” include those who have long-term physical, mental, intellectual or sensory impairment which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.³

The Rights of Persons with Disabilities Act, 2016 in its section 2(s) defines ‘**person with disability**’ which means, “a person with a long term physical, mental, intellectual or sensory impairment which, in interaction with barriers, hinders his full and effective participation in society with others.”⁴

The Act also defines ‘**person with benchmark disability**’ that means. “a person with not less than forty percent of a specified disability where specified disability has not been defined in measurable terms and includes a

¹Available at <http://online.uwsuper.edu/articles/assistive-technology-in-special-education.aspx> visited on 29.05.2021 8 at 5.18 p.m.

² Definitions of Disabilities available at <https://www.disabled-world.com/definitions/disability-definitions.php> visited on 29.05.2021 at 3.10 p.m.

visited on 29.05.2021 at 3.10 p.m.

³ Article 1, U.N Convention on Rights of Persons with Disabilities, 2006.

⁴ Section 2(s), The Rights of Persons with Disabilities Act, 2016.

person with disability where specified disability has been defined in measurable terms, as certified by the certifying authority.”⁵

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Under section 2(zc) “**Specified Disability**” means the disabilities as specified in the Schedule.⁶

III. Educational rights in international legal regime

Right to education has been recognised as a basic human right by the International instruments relating to human rights. **Article 26 to the Universal Declaration of Human Rights, 1948** states that:

1. *“Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible on the basis of merit.*
2. *Education shall be designed to the full development of human personality and to the strengthening of respect for human rights and fundamental freedom.*

3. *Parent has a prior right to choose the kind of education that shall be given to their children.”⁷*

Article 13 of the International Covenant on Economic, Social and Cultural Rights, 1966 says that “the State parties shall recognize the right to education of everyone with a view to free and compulsory primary education, higher education shall be equally accessible to all on basis of capacity, fundamental education shall be encouraged among people who have not received primary education.”⁸ **Article 14** lays emphasis on “the State party to secure free and compulsory primary education to all by working out a plan of action to that effect and effectively implement it within a reasonable time”.⁹

The **Convention on the Rights of the Child**, “adopted by the U.N General Assembly on 20th November, 1989, is a set of international standards and measures to protect and promote the well-being of children in society.”¹⁰

Article 2 “obligates the State parties not to make any discrimination among children for full enjoyment of their rights on the basis of disability.”¹¹

⁵ Section 2(r), ibid.

⁶ Section 2(zc), ibid.

⁷ Article 26, Universal Declaration of Human Rights, 1948.

⁸ Article 13, International Covenant on Economic, Social and Cultural Rights, 1966.

⁹ Article 14, ibid.

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¹¹ Article 2, The Convention on the Rights of the Child, 1989.

Article 23 of the Convention lays down that, “the State Parties shall recognize that a mentally and physically disabled child should enjoy a full and decent life, in conditions which ensure dignity, promote self-reliance and facilitate the child’s active participation in the community. The Article further recognizes the duties of State Parties to recognize the right of the disabled child to special care and shall encourage and ensure the extension, subject to available resources, to the eligible child and those responsible for his or her care, of assistance for which application is made and which is appropriate to the child’s condition.”¹²

The Convention on the Rights of Persons with Disability in its **Article 1** has laid down the purpose of the Convention. “as to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity”.¹³

The Convention in its Article 24 has said for the recognition by the State Parties the educational rights of the persons with disabilities. “State Parties shall ensure an inclusive education system at all levels and lifelong learning directed to:

- a. The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity;
- b. The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential;
- c. Enabling persons with disabilities to participate effectively in a free society.”¹⁴

In realizing the educational rights “the State Parties shall ensure that:

- a. Persons with disabilities are not excluded from the general education system on the basis of disability, and that children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on basis of disability;
- b. Persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live;
- c. Reasonable accommodation of the individual’s requirements is provided;

¹² Article 23, ibid.

¹³ Article 1, the Convention on Rights of Persons with Disabilities, 2006.

¹⁴ Article 24(1), ibid.

- d. Persons with disabilities receive the support required, within the general education system, to facilitate their effective education;
- e. Effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion.”¹⁵

IV. Recognition of educational rights in India

1. Indian constitutional provisions

a. Fundamental rights

Part III of the Constitution has enumerated certain fundamental rights of which some are given to all persons and some to the citizens only. One such vital right is the right to life and personal liberty which is given to all person irrespective of each and every thing. Article 21 states that “No person shall be deprived of life or personal liberty except according to procedure established by law”.¹⁶ Article 21 is so sacrosanct that it has been declared to be the basic structure of the Indian Constitution by our Apex Judiciary. The terms ‘life’ and ‘personal liberty’ have been interpreted several times and the scopes or ambits of these two words have been widely

amplified by our Judiciary. Judiciary has recognized several rights within the purview of the right to life. Now the term life includes Right to live with human dignity, right to education, right to healthy environment, right to shelter, right to privacy, right to speedy trial, right to get legal aid, right against handcuffing, right against torture so on and so forth. One of the vital rights which have been included in the right to life is Right to get education. One of the main facets of socio-economic justice is the education. Without imparting education rendering of socio-economic justice would not be a fruitful one. Rendering of socio-economic justice is one of the main goals of our Constitution as enshrined in the preamble to the Constitution.

In *Mohini Jain v. State of Karnataka*¹⁷, which is popularly known as Capitation Fee Case, the Supreme Court held that, “every citizen has a right to education under the Constitution. The capitation fee brings a clear class bias, which enables the rich to take admissions whereas the poor have to withdraw due to financial inability. Such a treatment is patently unreasonable, unfair and unjust”.¹⁸

In *Unni Krishnan J.P v. State of Andhra Pradesh*¹⁹, the Supreme Court recognised a fundamental right to education in the right to

¹⁵ Article 24(2), ibid.

¹⁶ Article 21, Constitution of India.

¹⁷AIR 1992 SC 1858.

¹⁸ Mamta Rao, Constitutional Law, Eastern Book Company, Lucknow, 2nd Edition, 2021 p. 125.

¹⁹ AIR 1993 SC 2178.

life under Article 21. Taking help from Articles 41 and 45, it held that, “every child/citizen of this country has a right to free education until he completes the age of fourteen years. Thereafter his right to education is subject to the limits of economic capacity and development of the State.”²⁰

In this way our Apex Court has given the right to education, the status of Fundamental Right within the meaning and ambit of the word ‘life’ under Article 21 of the Indian Constitution.

In 2002, the 86th Amendment of the Constitution took place which is vital from the point of view of ‘Education’. Right to Education has been added as a Fundamental Right in Art.21A which provides that, “the State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine.”²¹ Article 21A has been inserted with a view to implement the directive contained in Article 45. In other words it may also be said that the Directive Principle of State Policy contained in Article 45 has got the status of a Fundamental Right virtue of Article 21A.

b. Directive principles of state policy

Part IV of the Constitution has laid down certain directives or dictates or policies which have been given by the Constitution to the State and the State shall keep in its mind these dictates while making laws or formulating policies in order to make India a welfare nation. Article 45 which is the dictate in the aspect of education initially run as *“The State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.”*²²

Since this directive has been implemented by insertion of article 21A, Article 45 was required to be amended. Therefore by the 86th Amendment of the Constitution in 2002 Article 45 has been amended and presently the Article provides *“The State shall endeavour to provide early childhood care and education for all children until they complete the age of six years.”*²³

c. Fundamental duties

Part IVA of the Constitution consisting of only one article has laid down the Fundamental Duties of the citizens of India which has been inserted in the Constitution by virtue of 42nd Amendment of the Constitution

²⁰ V.N Shukla, Constitution of India, Eastern Book Company, Lucknow, 12th Edition Reprinted, 2016, p.211.

²¹ Article 21A, Constitution of India.

²² Article 45, Constitution of India as it stood before the Constitution (86th Amendment) Act, 2002.

²³ Article 45, Constitution of India as presently stands after the Constitution (86th Amendment) Act, 2002.

in 1976. When in 1976 Article 51A was inserted, it laid down ten Fundamental Duties which are to be obeyed by the citizens of our country only. But now by virtue of 86th Amendment of the Constitution, as clause (k) has been inserted to it, presently the article lays down eleven Fundamental duties of the citizens.

Article 51A(k), "lays down that it shall be the duty of every citizen of India who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years."²⁴

d. Other legislative initiatives in India

i. Rights of Persons with Disabilities Act, 2016

This Act has been enacted by the Parliament of our country with a view to give effect to the various principles of empowerment of persons with disabilities laid down in the United Nations Convention on the Rights of Persons with Disabilities adopted by the General assembly on 13th December, 2006 and India being a signatory to this Convention.

Section 3 of the Act has ensured equality and non-discrimination in almost every aspect to the persons with disabilities for their full

enjoyment of dignified life, respect and integrity.

Chapter III of the Act has laid down the provisions relating to education. They are:

- Section 16 has laid down the duties of educational institutions. The section runs as under:

"The Appropriate Governments and Local Authorities shall endeavour that all educational institutions funded or recognized by them provide inclusive education to the children with disabilities and towards that end shall:

- i. admit them without discrimination and provide education and opportunities for sports and recreation activities equally with others;
- ii. make building, campus and various facilities accessible;
- iii. provide reasonable accommodation according to the individual's requirements;
- iv. provide necessary support individualized or otherwise in environments that maximize academic and social development consistent with the goal of full inclusion;
- v. ensure that the education to persons who are blind or deaf or both is

²⁴ Article 51A, *ibid.*

- imparted in the most appropriate languages and modes and means of communication;
- vi. detect specific learning disabilities in children at the earliest and take suitable pedagogical and other measures to overcome them;
 - vii. monitor participation, progress in terms of attainment levels and completion of education in respect of every student with disability;
 - viii. provide transportation facilities to the children with disabilities and also the attendant of the children with disabilities having high support needs.”²⁵
- Section 17 mandates the Appropriate Government and local authorities to take specific measures to promote and facilitate inclusive education such as:
- “*Conducting survey of school going children in every five years for identifying children with disabilities, ascertaining their special needs and the extent to which these are being met;*
 - *Establish adequate number of teacher training institutions;*
 - *Train and employ teachers, including teachers with disability who are qualified in sign language and Braille and also teachers who are trained in teaching children with intellectual disability;*
 - *Train professionals and staff to support inclusive education at all levels of school education;*
 - *Establish adequate number of resource centres to support educational institutions at all levels of school education;*
 - *Provide books, other learning materials and appropriate assistive devices to students with benchmark disabilities free of cost up to the age of eighteen years;*
 - *Provide scholarships in appropriate cases to students with benchmark disability;*
 - *Make suitable modifications in the curriculum and examination system;*
 - *Promote research to improve learning; and*
 - *Any other measures as required.”*²⁶
- “Section 18 obliges the appropriate government and local authorities to take measures to promote, protect and ensure participation of persons with disabilities in adult education and continuing education programmes equally with others.”²⁷

²⁵ Section 16, Rights of Persons with Disabilities Act, 2016.

²⁶ Section 17, ibid.

²⁷ Section 18, ibid.

ii. Right of Children to Free and Compulsory Education Act, 2009

This Act has been enacted to provide free and compulsory education to all children of the age of six to fourteen years with a view to implement the directive contained in Article 45 of the Indian Constitution before the 86th Amendment of the Constitution in 2002. The provisions relating to education of child with disability were not there when the Act came into being. Subsequently such provisions have been included by virtue of the Right of Children to Free and Compulsory Education (Amendment) Act, 2012.

In its section 2(d) child belonging to disadvantaged group means and includes child with disability²⁸. Section 2(ee) states that, “child with disability includes a child with ‘disability’ as defined in section 2(i) of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995; a child, being a person with disability as defined in clause (j) of section 2 of the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999; and a child with “severe disability” as defined in clause (o) of section 2 of the

National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999.”²⁹

It has been stated in sub section 3 of the Right of Children to Free and Compulsory Education Act, 2009 that a child with disability as stated in section 2(ee) of the Act, “shall have the same right to pursue free and compulsory elementary education under the provisions of Chapter V of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 and a child with multiple disabilities may opt for home-based education.”³⁰

V. Concept of assistive technology

Assistive technology. “is an umbrella term that includes assistive, adaptive and rehabilitative devices for people with disabilities and also includes the process used in selecting, locating and using them.”³¹

An **Assistive Device**, “is any **device** that helps someone to do something that they might not otherwise be able to do well or at all. Generally the term is used for devices that help people to overcome a handicap such as mobility, vision, mental, dexterity or hearing loss.”³²

²⁸ Section 2(d), the Right of Children to Free and Compulsory Education Act, 2009.

²⁹ Section 2(ee), Ibid.

³⁰ Section 2(ee) (A), Ibid.

³¹ Duke Web Accessibility, Available at: <https://web.accessibility.duke.edu/learn/assistive-technology>, at 8pm

³² Bausch, M. E., Mittler, J. E., Hasselbring, T. S., & Cross, D. P. (2005). The Assistive Technology Act of 2004: What does it say and What does it mean? *Physical Disabilities: Education and Related Services, Special Report*, 59–67. Available at <https://files.eric.ed.gov/fulltext/EJ842007.pdf> visited on 29.05.2021 at 8 p.m.

In **Assistive Technology Act**, 1998 of USA, it has been defined as “*Any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain or improve functional capabilities of individuals with disabilities. AT service is directly assisting an individual with a disability in the selection, acquisition, or use of an assistive technology device.*”³³

Some examples of assistive devices³⁴

CATEGORY	PRODUCT EXAMPLES
Mobility	“Walking stick, crutch, walking frame, manual and powered wheel-chair, tricycle Artificial leg or hand, leg or hand splint, clubfoot brace Corner chair, supportive seat, standing frame Adapted cutlery and cooking utensils, dressing stick, shower seat, toilet seat, toilet

	frame, feeding robot” ³⁵ .
Vision	“Eyeglasses, magnifier, magnifying software for computer White cane, GPS-based navigation device Braille systems for reading and writing, screen reader for computer, talking book player, audio recorder and player Braille chess, balls that emit sound.” ³⁶
Hearing	“Headphone, hearing aid Amplified telephone, hearing loop.” ³⁷
Communication	“Communication cards with texts, communication board with letters, symbols or pictures Electronic communication device with recorded

³³ Available at <https://www.parentcenterhub.org/ata/> visited on 29.05.2021 at 4.15 p.m.

³⁴ Assistive Technology for Children with Disabilities: Creating Opportunities for Education, Inclusion and

Participation available at <http://www.unicef.org> accessed on 29.05.2021 at 5.00 p.m.

³⁵ ibid

³⁶ Ibid

³⁷ Ibid

	or synthetic speech.” ³⁸
Cognition	“Task lists, picture schedule and calendar , picture based instructions Timer, manual or automatic reminder , smartphone with adapted task lists, schedules, calendars and audio recorder Adapted toys and games.” ³⁹

a. Benefits of assistive technology in education

Assistive technology provides, “creative solutions that enable individuals with disabilities to be more independent, productive, and included in society and community life. Technology and inclusion go hand in hand. Without technology supports and accommodations, many significantly disabled students cannot take full advantage of their education. Without the opportunities for interactions found in inclusive settings,

students cannot truly demonstrate their abilities.”⁴⁰

Assistive technology, “enables students with disabilities to compensate for the impairments they experience. This specialized technology promotes independence and decreases the need for other educational supports. Specialized technologies allow teachers to customize instruction while giving more time to the entire class and provide other students with an enriching educational experience”.⁴¹

Some of the major benefits of Assistive technology in education are as follows:

1. It gives them self-confidence – Learning disabilities often causes lack of self-confidence. If the sufferer struggles with this disability daily then it may bring a sense of failure in him. But with the help of assistive technology he would be able to overcome the disability and he will feel more positive and will learn with more and more enthusiasm.
2. Students can better reach their potential – It is often thought that the children with disabilities are not as intelligent as other peers in the group which is not at all true. They may have higher level of IQs than the others.

³⁸ Ibid

³⁹ Ibid

⁴⁰ Benefits of Assistive Technology available at <http://www.csun.edu/~hfdss006/conf/2002/proceedings/16.htm> accessed on 29.03.2020 at 2.28 p.m.

⁴¹ The Benefits of Assistive Technology in Schools available at <http://www.brighthubeducation.com/special-ed-law/73643-the-benefits-of-assistive-technology-in-schools/> accessed on 29.03.2020 at 12.41 p.m.

With the help of assistive technology they would overcome the barrier and can answer to what the teacher has asked for. So their potential can be easily reached.

3. It helps them to be more independent – Children with limited mobility in hands are often assigned with note taker in the classroom or in examination hall so that the writing would be legible to the teachers or examiners. But if the speech recognition software or live scribe pens are used then there is no requirement of note taker and it would make the child more independent.
4. It makes the curriculum available to all – Children with low or no vision are not able to see the content of the textbook or what the teacher is writing on the board. But assistive technology gives teachers the ability to convert material so that it becomes accessible to everyone. There is a software that enlarges the portions of the text or a programme that reads out the contents of the text so that visually challenged children's disability can be impaired.
5. Assistive technology can boost engagement among users – Children often feel disheartened and do not want to participate in the subject like Maths when they think that they cannot do. Through assistive

technology they can participate in solving the maths in the form of game software and hence their engagement is boosted up.

VI. Suggestions

After this short study the following suggestions may be put forward:

- First and foremost the provisions pertaining to assistive technology contained in the Convention on the rights of Child, 1989 and the Convention on the Rights of Persons with Disability are required to be implemented in Indian scenario;
- Assistive technology for children is needed to be included in disability strategies and plans of action;
- All aspect priority must be given to ensure that the products of assistive technology should reach the children in need of such;
- Adequate funding is required to improve the availability and affordability of assistive technology for children with disabilities;
- Increase awareness and understanding about assistive technology for children with disabilities.

VII. Parting note

In the modern era education plays a pivotal role in shaping the character, nature and future of a child. A child who is disabled in

some way or the other due to any physical deformity cannot be made the subject of segregation from the others since their deformities are not in their hands. The new Act of 2016 has said for inclusive education which has been defined in, “its section 2(m) as a system of education wherein students with and without disability learn together and the system of teaching and learning is suitably adapted to meet the learning needs of different types of students with disabilities.” For the purposes of imparting education to children with disabilities assistive technology help a lot and make it easier for them to learn and take the lessons very easily. Here one of the most important things that deserve a mention is that the cost of these essential assistive technology is required to be reduced and the availability to be increased so that these can be bought and used easily.