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INCLUSIVE TOYS FOR PRESCHOOL EDUCATION IN INDIA.

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Abstract

Inclusive classrooms are where all diverse students from society get an equal opportunity towards education. According to SDG-4, quality and inclusive education can promote lifelong learning opportunities globally. Inclusive toys can ensure quality and equally accessible education among assistive technologies and teaching strategies. Children with disabilities, especially preschool, can easily influence education. Inclusive toys help them to understand concepts and can develop skills with fun.

Toys are tools for people, especially children who can play and build specific skills or, as disasters called, educational toys / inclusive toys. Few inclusive toys can be adapted according to the need of children with disabilities. The most common types of developmental disability are autism spectrum disorder, cerebral palsy, intellectual disability, attention deficit hyperactivity disorder and learning disability. These students need clinical help in education through the treatment, including physical therapy, occupational therapy, speech-language pathology service, etc., which can do through these adaptive toys.

This paper reviews the importance of inclusive toys and their role in the holistic development of children with special needs. It also examines the teaching strategies that can be adaptive in the preschool using inclusive toys.

Keywords: developmental disability, neuromuscular disorder, intellectual disability, learning disability, primary school education and autism.

Introduction

Education is the fundamental right of each child in India. Early education is considered most significant for human growth, development, emotional and learning for all children and children with disabilities. Therefore preschooling is not only for individual development but also for the development of social equality, economic empowerment. (NCERT, 2019). Preschool is defined as an early childhood program where children combine with play, taken care of by professionally trained adults. Children from three years to six years are enrollment in preschools, and they will qualify for further studies. (Encyclopaedia of children's health,

2022). Enrollment status of children with a disability in India shows that three -year age-old children in preschool are 65 to 75 %, four year age of children enrolled in preschools are 75 %, 69% of five-year-old children and 35% are the age six years were registered in 2018. (ASER, 2019). When taking care of developmentally disordered children, teachers and parents should create a proactive environment to prevent behaviour problems in children.

Developmental disorders

Children who can't achieve developmental milestones according to appropriate age should be considered as children with developmental disorders. Parents and professionals will give special attention to these children on their growth and activities to find the delays or problems through proper monitoring methods. These impairments can begin before a baby is born or after birth because of injuries, infections or other factors which damage neurons. So development disorders are caused because of mixed complex factors (Centres for disease control and prevention, 2022).

According to the reports of WHO, 15 to 20 % of children are with developmental disabled in the world. The study about the number of children suffering development disorders in the world by the medical journal 'The Lancet states that 1.15 crore of children is with the developmental disorder in India. In India, six developmental impairments were referred to as serious and they are epilepsy, intellectually disability, hearing impairment, visual impairment, autism spectrum disorder and attention deficit hyperactive. A study in The Times of India, 2018 proclaimed that India is tops in kids with developmental disabilities. ADHD is an impairment of functioning because of neurodevelopmental disorder characterized by inattention and disorganization or hyperactivity. (American Psychiatric Association, 2013) children with ADHD may have attention problems, control impulsive behaviours, and be over-reactive.

Sometimes recognized characteristics of children with developmental disorders in the communities are late. Lack of awareness of teachers and parents about developmental disabilities may fail to understand the children and label them as slow learners or stupid or useless. Parents strongly believe that their children's slow progress and change the schools. (Limaye, Sandhya, 2016).

The following three criteria are considered as the intellectually disabled children:

- Their mental capacity is low such as they are low in performing reasoning, problem-solving. Generally, an IQ test score around 70 or 75 indicates their intellectually functioning limitation.

- Limitation adapting skills like conceptual skills- skills in improving language and literacy, self-direction; social skills- skills like problem-solving, ability to recognize rules and obey them, and not being victims; practical skills- are activities of daily living.
- Manifest the condition before the age of 18 is because of several developmental disabilities.(Abha Shree and P.C. Shukla, 2016)

Early intervention

Siegal in 1972 defined Early intervention as the introduction for planning deliberately timed and arranged to alter the anticipated or projected course of development. Early intervention is meant to be a developmental delay in children is crucial for enhancing their effect. (Lakhan. R, et al., 2013). Early intervention is for children from the age of 0-6 years who are at the risk of establishing developmental delay of various degrees and associated conditions. The essential goal of early intervention is too imperative to identify those children who are likely to have developmental delays. Infants and toddlers are problematic to find developmental delays, but it's easy to help them with their developmental delay if they find them early. (Persha J. A, et. al, 2003)

EI is designed with systematic educational support for young children with developmental delays, minimizing the potential of developmental delay and the need for special or inclusive education service that enhances not only the child but also the families. (Baker. L.B, et. al, 2003& 2018)

Inclusive toys and design

Inclusive toys are toys for inclusion, creating the segregated multigenerational play space accessible for all children with or without special needs. (Toys for inclusion toolkits, 2018). Toys are simple objects that provide playful activities that should complete their special needs and improve the development of children's motor, social, and cognitive skills. (Medola, 2016).

Inclusive design is the concept that introduces strategies for equality in users and offers egalitarian condition of use and improvement in life quality. The practical function of inclusive products refers to aspects of its service to improve the functional abilities and reduce or eventually eliminate the disabilities of the users. (Santos. A. D. P, et al., 2019)

Play and play materials

For playing, toys are necessarily required. (Newson & Newson 1979) play is defined as an integral part of the educational environment. Play ensure social, emotional and cognitive development in children. Play help children to adjust to schooling, and it encourages children's in readiness for learning, learning behaviours, and problem-solving skills. Play concerned o to enhance a child's ability to learn are elevated at the expense of others. The play gave social and emotional attachment to the peer, a vital component. (Coolahan et al., 2000)

It is a fundamental right of a child according to article 31 of the United Nations Convention on the right of the child and also should provide quality playing materials and according to the Indian right of the child also mention the relax and play is a right under the subsection of Right to Development. (Child Right in India- Right to Education and Health, Smile foundation,2022)

Importance of play:

- Play contributes to the cognitive, physical, social and emotional wellbeing of children with or without needs.
- It promotes creativity in children. (Malayankandy. U. A, 2014)
- Play help child to be adjusted to the environment of the school. (Coolahan et al., 2000)
- Using adaptive playing methods will improve developmental delays in children.
- A child learns to develop language and primary behavioural characters like sharing and caring for each other.
- Play help child to learn efficiently, like number and colours
- The child becomes creative and attains the skill of problem-solving. (Anderson. K. J, 2010)

Type of play for preschoolers

- Onlooker play happens when the toddlers watch other children and learn how to play a game or use a toy.
- Parallel play will begin from the 18th month to 2 years of a child who plays alongside without any interaction with other children.
- Associate play, they interact with other children, and they begin socializing, and it is also called loosely organized play. It improves the sharing and creative skills of the child.
- Social play from this child began to learn moral reasoning to develop a sense of values by socializing with other children.

- Motor- physical plays, where the child starts running, jump etc., by playing hiding and seeking.
- Constructive play is where children create, think and play with it. It makes improvements in creative thinking and imagination skills.
- Expressive play where the child expresses the feelings in drawings, clay making etc., which make the child relieve their stress.
- Fantasy play for the development of language and behaviour development these types of game have a significant role. Children stretch their imagination with the toys and play with them as characters.
- Cooperative play where children became a group with a leader and played any games that needed cooperation and team bond. (Anderson. K. J, 2010)

Play materials:

Children with disability should need varied play materials to be motivated to engage in quality play, constantly improving their social and emotional development. The teachers should give an equal amount of time allocated for space which should not be a barrier to allow children to interact exhaustively with the play materials, so schools should provide more varieties of play materials to preschool children to improve their social and emotional development (Mwatha W, 2017).

Toys that stimulate development in children with developmental disorders

Toys are the tools that can be used for playing, developing emotional, social, and building skills. Toys should have characteristics especially in educational toys are: stimulate the skills for the child, it should satisfy all functions and benefits, train the child accuracy, patience and perseverance, education toys can be used to prepare the delicate motor nerves, and child creativity is stimulated. Always teachers should choose what and which should suit the students according to their individual needs. Children can understand the natural world and learn about that world through playing. (Mustafa Onder, 2018)

Table 1

Traditional educational toys for inclusive classrooms

Sl. No	Toys	Benefits of toys	Usage of toys in classrooms	Inclusive changes
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1.	Playdough	For fine motor skills can use for teaching science, language.	Teach can make the students creative and help to understand colour and combinations.	Which should be bright colours and a wonderful smell to help children with visual and hearing impairment can also be recognized.
2.	Geometric shapes	For improving the mathematics skills	Teachers can create their toys is made of cardboard or colour flannel.	Geometric shapes should spell the form and the colour of the form.
3.	Flashcards	For language lessons and maths	Teachers can use emotion cards as a toy to help them understand emotions and empathy.	Flashcards with three dimensioned figures with magnified letters and make sounds for hearing and visual impairment

(Source: Widiastuti A.A, 2014)

These are familiar traditional toys created by teachers for educational purposes. When students need special attention, teachers should use these types of toys. A successful classroom is when all students get benefits and opportunities equally. Nowadays, toys and educational games have become digitalized and assistive devices too. These with inclusive changes can be so easily adaptable to children with disabilities and the normal. In playdough toys/ play material, teachers can innovate more possibilities to them inclusive, like adding flavour smells and bright colours etc. Can we use sound-making applications that spell the colour of the shape and what shape it is in geometric shapes? Teachers should allow children to do these by themselves to learn how the form to be? In flashcards, can implement magnified letters, 3 D figures and also sounds which can be like spelling or be like rhymes. New technologies can be adapted to the traditional toys and playing methods to make them more comfortable and inclusive in classrooms.

Table 2

Smart educational toys for inclusive classrooms

Sl. No	Toys	Purpose of toys	Inclusive changes
1.	Nursery mobile	Which help the child to focus on an object and develop an attention span.	Which can talk to the child and teach them spellings, shapes, colours and numbers
2.	Mirror	Children will attain self-discovery as they learn about body parts.	Mirror with already marked body parts approximately on the position and the letters should be in a bright colour-magnified and in braille.
3.	Ring Stack	Help for holding and moulding. It develops fine motor skills and also recognizes colours and counting.	The stack should sound-making and blink colour lights which help disabled children to find the position of the stack to put the rings on them.
4.	Push-pull toys	These help to the development of muscular and balance while walking	Toys with sound and colour lights help the child recognize their activity.
5.	Shape-sorting toys	Puzzles, blocks and buckets help the development of locomotion, mental development and recognizing capacity.	Should be friendly to the visually disabled, hard of hearing and multi-disabled children.
6.	Mechanical toys	Knobs, buttons and levers can encourage fine motor skills in children.	Toys can make a sound if they succeed in the task and help by instructing them by sensing the body heat technology.
7.	Role-play toys	Children play roles with dolls and stuffed animals, encouraging their emotional and social development.	Talking toys, bright coloured and details specified 3D toys.

(source: ElanaPeral Ben, Joseph, M. D, 2018)

There are so many intelligent toys that can provide more than one benefit by their use. In table 2 discusses the smart toys used in preschools of India. Nursery mobile is the device that helps preschoolers to improve their vision and as well as to improve their attention. Mirrors are used in preschools for encouraging children to explore themselves and understand what the body parts are and how they function. Ring stack is a toy that is like block building so that children can develop fine motor skills, and also it creates the recognize colours and counting skills. Push-pull toys are used to attain walking balance and muscular development. Shape-sorting toys are used in preschools to develop locomotion, mental stability and recognizing capacity in children with developmental disorders. Mechanical toys are like simple machines which help children develop fine motor. Role-play toys are shaped by a character where children can choose their roles and build social and emotional skills. But moreover, these smart toys nowadays robotic toys play a significant role in the development stimulation of children in preschools.

Universal Design for learning

The importance of toys in children with developmental disorders is to help them learn or develop their social and emotional skills through play. To teach children in 3 years to 6 years with full attention in class is challenging. So teachers are compelled to create their strategies and combinations of assistive technologies.

Universal design is defined as the product, environment, programmes, and services used by children with special needs to the greatest extent, without the need for adaptation or specialized design. (UNCRPD, 2006). It is a framework for the teaching and learning transaction that intellectualizes knowledge through learner-centred. UDL is a promising approach to effectively meet all the needs of students with disabilities (Shaw. R. C, et al., 2017).

Most adaptive teaching strategies in Inclusive classrooms with toys can be designed by the teacher and co-working team using assistive technology. Universal design and education is a traditional pedagogy that facilitates inclusive education. Framework for Universal design for learning (UDL) is classified into three according to the principles of UDL are recognition learning, strategic learning and practical learning.

- a) Recognition learning is which focus on the remembering and recognizing of characters and keywords of books. For example, teachers adapt visual aids, shortcut stories, regular revisions, etc.
- b) Strategic learning is which help students to make a report of the stories or topic they learn in class—for example, class notes, worksheets, written assignments, and sequential arrangement of pictures/sentences.

- c) Affective learning: The students share their opinions and discuss their feedback in classrooms. For example, peer group discussions. (Malone&Lepper, 2014)

Principles of UDL are:

- i. To provide multi-flexible methods of presentation through recognition learning.
- ii. To support multi-flexible methods of expression through strategic learning.
- iii. To support effective learning by providing flexible methods of engagement.

(Mega, Ronconi,&Debeni,2014)

Using UDL in the classroom while designing strategies, teachers should keep two things in mind.

First, the teacher should know what the class wants to plan. Second, the teacher should commit to full fill the principles of UDL by taking time to plan and execute in the classroom. (Learning module on universal design for learning, 2018)

According to the journal of India 2020, the Gujarat government is going to make the world largest toy museum with more than 11 lakhs of toys, which should be in the theme of the history of India.

Parents of preschoolers with developmental disabilities

In most developing countries like India, parents take the role of caregiver. Parents lacking awareness and less training to handle developmentally disabled children will affect their development. Many studies show that parents' perspectives towards inclusive toys and learning through play are negative impressions. Their belief about toys is just the object that can give their children joyfulness. A toy can convey a concept to a child and also helps in the development of children in social and linguistic skills. Parents of children with developmental disorders were undergoing mental and financial problems.

The main factors which influence parents to educate children with disability are:

- Education qualification and their perception about educating a disabled child; social stigma towards the disordered development child plays a role. So that parents used to teach them in-home or in special schools, which are dependent upon the family's financial background. Parents ' education qualification helps the child with a developmental disability be well placed in education and care centres. (SandhyaLimaye, 2016)
- Lack of awareness about India's law, institutions, and policies for children with developmental disorders. There are special provisions for infrastructural and assistive devices in preschools for children with disability and also in inclusive classrooms.

- Transport facilities to care centres and educational institutions; if the parents belong to the rural area may suffer from transport facilities that limit child visits often to the educational institution and care centres for the therapy. (*Sustainable development-ChallengesforIndia*, n.d.)
- The family's economic status; education is free for all in India till 14 years. But educating a child with developmental disabilities is very expensive, primarily since the institution can provide assistive technologies.

Perceptions of Parents Towards Inclusive Toys and Education:

Toys are a part of childhood, which can give pleasure and developments in social, emotional and locomotors. But some of the parents are worried about toys like weapons and harmful toys, which may lead children to negative means of learning. Some toys are not useful for the development of children with disabilities. Toys used for educational intervention for both disabled and not should perform their function individually, play-drive instead of the rigorous, formal classroom. (Venkatesan, 2015a; 2015b). The efforts should take by the caregivers for organizing special days like arts and games days for students to mingle with others. They explore their world with toys that provide emotional growth. In the study of Venkatesan and Yashodhara Kumar in 2017, parents express their opinion about toys for educating their disabled child are they believe in toys can't completely change their disabled child to normal, since the child is too young parents are to choose apt toys for their development. They can't play a complete role in the child's development, purpose some toys may be mistaken by the child, which caregiver or teacher should correct, and toys do not have a role in the development of senses related to vision, hearing, smell or touch.

The attitude of parents toward the toys are:

- Unaffordable and dispensable luxuries toys are most effective for the child's development.
- They are less aware of the use of toys that can stimulate child's development and the skill to choose appropriate toys for the age .
- Toys can't use for all developmental disorders in children.
- The child will obsess with the toy by more use, so parents train them in reading and writing. So that parents think of it as a waste of time to make a child play with toys.
- Toys may make the child aggressive and distractive.

- Digital toys are preferred more than others, but only affordable. (Venkatesan, 2017)

Toys Industries in India

Toys are a part of early childhood life. Toys do not only provide entertainment but should be educating. Toys play a significant role in a child's life, so safe and harmless toys are a child's right. Indian industry has some regulations for toy making, especially the toys for children aged 0-6 years. There are Ten categories of dominie in toys markets are stuffed toys, electronic toys, constructive/ building toys, dolls, ride-on, sports and outdoor play toys, preschool articles toys, games and puzzles, activity toys, atmanirbhar/traditional wooden toys and GI (Geographical Indication) toys of India. While selecting a toy for children with or without special needs

Do:

- Choose early childhood friendly toys.
 - Complete but detailed toys.
 - Bright and pleasant coloured toys
 - Not too hard, but they should be perfectly shaped toys.
 - Choose toys that can engage the child with activities.
- (Parlakian. R, 2022)

Don'ts:

- Should avoid small parts or loose items
- Fur or hairs can make them allergic.
- Sharp edges are dangerous.
- Small removable attachments.
- Weapons toys
- Button batteries. (Misra. S & Gupta. P, 2015)

The latest development in Indian toy markets:

- According to the report of India's national productivity council, the country's nastic development with enhanced technologies suggests and gives emphasis.
- The Indian toy industry is Heraldng the inclusion of new educational toys for inclusive classrooms.
- Indian home entertainment has the licensee for Walt Disney studios and some famous others. (Misra. S & Gupta. P, 2015)

- Between 2020 and 2040, toy industries expect drastic growth because of the implementation of stem toys. (Howarth. J, 2021)
- Implementation of robotics in toys.

Limitations

- Some effective educational toys or developmental toys are expensive.
- Lack of trained teachers and caregivers of children with the disorder.
- Transport facilities to the special schools and care centres from rural areas of India.
- Social taboos and social attitudes towards children with disability is significant limitation.
- Less aware of parents about disability and how they should take care of their child with a disability.

Conclusion

Toys are the tools that can influence a child's emotions and social behaviour. Developmental disorders in pre schoolers can be improved by training and giving professionals good care. This review paper discussed toys stimulate the development of developmentally disordered children. Parents of these children have played a significant role in education. The factors which influence parents to limit their expectations on children with disability are mostly the slow progress and their economic condition. There is progress in toys from traditional toys to digitalized toys that aim to develop children with disordered.

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