

The present project was attempted to investigate about the effects on the learning process of using tablet devices with the children having special learning needs. A few specially designed apps that were based on single concepts were uploaded in the devices and the children were asked to play with the apps. The sample group of children were all getting trained at **Spastics Society Centre, Kanpur**. The centre gives training and guidance to children with varied mental disabilities and conditions.

A sample group of 20 children were identified for conducting this study, which were further divided into 2 groups of 10 each. One group of children had intellectual disabilities and the other group of children had cerebral palsy. An additional purpose of the study was to identify the advantages and challenges of using tablets with these children and to get them used with operating the device. The devices by itself did not have any appropriate and meaningful educational apps for these children. So it was decided to design a few apps and study the impact of using these apps with the children. Descriptive and qualitative analysis were used for the data analysis.

The study findings revealed that tablet devices are one of the best assistive aids that can be used for teaching children with special needs. There is a positive hope that if these children could get the access to appropriately designed apps based on educational topics, it would really benefit them a lot. There is a lot of scope for designing more apps in their mother tongue Hindi and based on the pedagogy of education suitable to their level of intellectual functioning.



Using specially designed apps in Aakash tablets as teaching tools to improve the learning process in children with special needs:

The main aim of education for children with special needs firstly is to enable the person to live a full filling life more independently. Special education also facilitates the person to realise his or her potential as a unique individual through access to an appropriate curriculum and providing the children with educational supports and aids to realise that potential. These children need ample support to break the barriers to their learning process. The teachers and the professionals helping the child have always been using innovative methods and modes of teaching to make the children learn effectively. All children have individual needs and learning styles, not just those with disabilities. So there is always a compelling need for changes in the curricular content, and to make it more flexible and accordingly modify the teaching approaches in the school curriculum.

According to the census data 2011, out of the total population of Uttar Pradesh, there are 2.43% males 2.03 % females who are disabled in the rural areas.

The population of males with disability in urban areas is 2.34% and the female population is 1.98%. In this population there is relatively a significant number of children who have various cognitive disabilities and are just kept in their homes without any educational experience. There are many ways to give these children also an opportunity to educate themselves with the basics and to train them to lead an independent life.

The principal objective of the present project was to study the effect of using Tablet devices as a teaching aid for the children with special needs. Tablet devices have a huge potential for special education purposes because it makes learning portable, mobile and accessible. Technology can compensate for the functional limitations of the individual.

- ✚ It provides opportunities for innovation teaching interventions specifically designed to address the disabilities they face towards the learning process.
- ✚ The multi sensory level of teaching, which is vital to these children are ideally addressed in the tablet technology.
- ✚ It provides a very interactive and direct teaching for the children using it.
- ✚ The most efficient way of teaching methodology for the children with special needs involves visual, auditory and kinaesthetic learning (tactile) learning and the tablet provides the kinaesthetic effect of learning.
- ✚ The programs created for one gadget is easily transferable to another one for exchanging with other children who are having similar disabilities.

A curriculum that a student should follow could be designed based on the age of the person and based on that individual's needs and priorities. It is also important to take into consideration the pedagogical issues of education. If the curriculum should be beneficial to the child, then it should always be used in combination with the normal curriculum standards.

Children with cognitive disabilities also need to learn academic content. They need to learn academic content in logical progression rather than from a list of topics that appears in regular curriculum. It is not right to choose a functional curriculum because the student is too disabled and have low expectations. Their disability and the activities that they cannot perform have prevented these children from getting exposed to any formal educational material. In fact general educational content provides a new experience to the person which makes him feel more confident about himself. They also get a sense of happiness and belonging, that they are also included in activities that other children in the peer group or siblings are doing in their daily life.

A specially designed objective curriculum is a must for children with special needs. In that curriculum the instructor should clearly specify in a detailed way, the list of tasks or educational activities to be taught. Then, those activities should be again specified as activities on a daily basis, which will eventually teach one concept to the child at the end of one month or so.

The functional approach of educating students with disabilities is to provide the format and contents of a curriculum. It also requires an instructional methodology for the application of the skills in reality contexts. The attempt to create this is to incorporate the best features of both the curriculum. The objective is to teach functional skills, age appropriate skills and to alter the teaching based on systematic evaluation of the student's progress. It is also important that through the education process, the educators focus on the implementation and on the transfer and generalisation of knowledge and skills to everyday life situations.

Functional skills are defined by reference to their effect. It is mostly directed towards behaviour. If the behaviour achieves its intended outcomes for the child, then it can be said to be a functional skill.

First and foremost the primary task is to identify the life skills, which are then expressed in the form of educational goals and objectives and then to chart out the appropriate strategies for instruction.

Everyday spoken and written communication can also be a part of functional skill only. Functional literacy is also important for students with disabilities to know more about other academic areas. A very important component of literacy is to acquire reading skills and then the ability to write.

Functional skills are an important and essential instructional component. It facilitates and guides the individual for the transition into adulthood. Grade level teaching cannot be totally ignored as something against functional curriculum. It can still be used as a guideline for determining priority goals of the individual.






Functional Curriculum can be further divided into the following sub topics to facilitate educators to work on the detailed planning of teaching the concepts in each of the following subjects:


- 1) Functional literacy- sight word reading
- 2) General reading approach- Literacy instruction
- 3) Functional Numeracy
- 4) Hindi sight words and alphabets
- 5) Social skills – self awareness, feelings
- 6) Communication skills- basic conversations, listening skills and speaking skills
- 7) Calendar and time concept
- 8) Basic concept of money and to teach them how money is related to certain activities in their life. And to create a virtual experience to boost the confidence that they can also handle money on their own.

The meaning of functional in literal terms is to be practical and useful. Hence functional literacy means to get educated enough to feel or manage issues in the daily life of the individual. The educator has to address both functional sight word instruction (Hindi and English) and literacy instruction.

Using these curriculum guidelines a collection of educational apps were designed which can work as a supplementary teaching aid for the children with special needs. Each app has been designed to teach a particular basic concept or to improve some learning process of the person. Educators have to use a combination of approaches and methods to provide the teaching, support and educational curriculum for the children. These versatile approaches are necessary to increase the academic performance of the children.

The apps were designed using the following guidelines:

-  **Error- free learning-** The interactive activities of the app should not penalise users for wrong answers, instead will only let users put the items in the right spaces, visual prompts and cues are also provided to encourage the users to succeed.
-  Simplicity in design and visually distinctive interface work very well for these children.
-  Apps that focus on a single concept or one function make it easier for them to understand. The Apps have used minimalist design to prevent cognitive overload.
-  Every app provides only those features for a particular concept learning and that the user will need to accomplish the task.
-  The design of the apps has limited the use of multi touch gestures within the app.

 **The predictability of an app** – the same reaction will happen every time this action happens – is a huge advantage of using apps to communicate, along with the tactile input of a touch screen.

The present study of using technology for special education is conducted based on phenomenology approach, which means just to record the subjective experience of the children who are using the apps in the tablets. It is also a way of collecting data through direct observation method. The study is analysed based on qualitative research approach because of the diversified group of users with varied disabilities. The responses or outcomes are also very subjective and depends on the participants and how much they learn by using the app repeatedly over a period of time. In a qualitative research analysis the responses cannot be quantified or analysed through statistical software, since the response of the testing is also individualised.

The Spastics centre of Kanpur has been providing training and rehabilitation to a number of children in the city for the past 24 years. They have been working towards training these children in a holistic approach by providing some basic education and train them to manage their self needs. In some cases, where the children have grown into adults they also provide some basic vocational training, to give them the confidence that they are contributing something useful to the society.

For the present study we used 2 groups of children, each group has 10 children each. In one group there were children who had cerebral palsy and the other group there were children with intellectual disabilities.

