

## **Innovative Teaching Strategies for Special Education using Information and Communication Technology at Vasant Valley School**

### **Profile**

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### **Information and Communication Technology at Vasant Valley School**

Vasant Valley School has two well equipped computer laboratories and the children are encouraged to explore Information Technology in their own time and at their own pace. The school believes in encouraging "hands on" learning and the children have the freedom to use the labs for research and reference as well as entertainment through games and music. It is the philosophy of the school not to teach computers as a subject but to empower children to use computers as an aid in imbibing life skills. Computers are used at all levels in the school from Foundation till Class 12.

### **Special Education at Vasant Valley School**

Vasant Valley School has a Special Education Needs department, with 45 students. These children have varying disabilities and have their own skills and strengths. They follow their own individualized education plan (IEP). Every child's IEP includes every facet of his development, not just academic learning in a school situation. There is equal emphasis on emotional well being, social skills, communication competencies, daily living skills and community awareness.

The children enrolled in the Special Needs department, experience the entire gamut of school life in Vasant Valley School. They participate in all school events and activities, in school and outside. These include adventure camps, athletic events, and the performing and creative arts and inter school activities.

Peer interaction and opportunities to participate in the fabric of school life help the children with special needs to pick up peripheral cues and enormous amounts of incidental learning takes place.

## **Concerns**

### **Emotional and Social Challenges**

Communication skills have been identified as a major area of concern. Most children with special needs find it a challenge to communicate appropriately. This gap between them and their peers, often results in inappropriate behaviour, often in public situations. Frustration and anxiety builds up and in the absence of modes of expression, results in behaviour concerns and unusual behaviour patterns.

### **Educational Challenges**

1. Keeping pace with the lesson being taught in the class is a challenge for children with disabilities who are part of the inclusive classroom. The special educators attempt to bridge this gap by repetitions and remedial work.
2. Understanding abstract concepts is a major issue for children with special needs. Anything that requires thinking, imagination or mental calculation poses a great challenge
3. Table top and pen paper activities are ineffective in teaching most children with special needs due to an inherent inability to concentrate on these activities for long periods of time.

### **Teaching Strategy**

Vasant Valley School has a multi disciplinary team working with the children with Special Needs. Each child receives the services of a Special Educator, A Speech and Language therapist and an Occupational Therapist.

As a teacher conversant with using information technology I formed the 4<sup>th</sup> prong in this team and collaborated with the other 3 specialists to enhance and provide a new dimension to the learning of the children.

The Inclusive Education Plan (IEP) for each child is created by this team, keeping in mind the preferred learning style of the child as well as various academic areas the child will cover in the school year.

### **Use of Technology:**

#### **Observations:**

I have observed that children with special needs enjoy the experience of learning through a different medium - Computers. These observations led me to take on the challenge of using IT as a tool to make learning easier and more interesting for them.

Computers add value to and enrich the total learning experience of students with special needs. Using computers as a tool, children with special needs are able to address emotional and social issues and overcome educational challenges.

Technology has proved to be an invaluable tool for teaching children with disabilities. Customised **Power Point** and **Flash MX** presentations and quizzes have been created

and used by me not only to *reinforce the learning in each area* but also to introduce *new concepts* on the academic front and as an aid in *addressing social and behavioural issues*. Children learn in different ways, through seeing, listening, moving, doing and touching. These presentations are effective in teaching because they incorporate multiple learning styles. The presentations are interactive and cover the entire gamut of academic as well as non academic needs.

### **Computers and educational challenges**

1. Computers serve as a tool for self paced learning. Students with special needs can learn at their own pace without prejudice. Multiple repetitions are also easily possible.
2. Abstract concepts can be brought to life and simplified with the help of computers. A child who finds it difficult to understand for example the concept of fractions can do so with the help of computers which concretize the concept and provide interactive and visually appealing aids to learning.
3. Computers with their rich and colourful graphics provide a visually appealing medium to capture and retain the attention of children with special needs and help them to learn away from table top and pen paper activities in a play way method.

### **Teaching and reinforcement of academic areas using technology at Vasant Valley School**

Since Vasant Valley School has a totally inclusive setup, academic concepts are picked from the mainstream academic curriculum and taught to children with special needs at a level appropriate to their individual abilities. A resource base of presentations has been created which are used by me in the children's computer lessons and can be accessed and used by special educators both in the junior as well as senior wings over the school network. These presentations and interactive quizzes are used to teach and reinforce a wide array of academic areas from teaching math concepts like fractions, money handling and weights and measures and science concepts like human body systems and states of matter to social science where they were taught about India and its neighbours. Several animated stories and comprehension exercises have also been created and used by me to aid in the teaching of English. General awareness concepts like Electric safety and Road signs etc. have also been taught very successfully through these presentations.

#### **Case # 1**

**Challenge:** *Money handling:* An attempt was being made to teach children with special needs the concept of money so as to enable them to shop independently. However, children found it difficult to understand which currency note to use. They would usually end up paying too much or too little.

**Solution:** A Power Point presentation was created incorporating Visual Basic macros and images of actual currency notes. The presentation gives the child options of currency notes to use. For example, if a child wants to buy an eraser which costs Rs. 5, an image of an eraser appears only if the child clicks on the appropriate currency. Regular practice with this presentation helped to prepare children for their shopping sessions.

Students with special needs enjoy and are comfortable with using this medium as computers are non judgmental and unfailingly patient and therefore can be used as a practice arena by students with special needs. They can be used to teach children appropriate social behaviour and communication skills without the fear of making silly mistakes or being judged by their peers

### **Teaching and reinforcement of appropriate social behaviour using technology at Vasant Valley School**

Customised Flash Mx and Power Point presentations were created and used very effectively, for example to teach appropriate behaviour while on adventure camp with the whole school, or to prepare students with special needs for situations that cause anxiety like a visit to the dentist. Young girls were taught about hygiene during menstruation, adolescents about appropriate and inappropriate touching, young children how to wash their hands and blow their nose, all through repeated exposure to these presentations.

#### **Case # 2**

**Challenge:** *Inappropriate touching:* ABC, an adolescent child with special needs would touch himself inappropriately in public places and at school causing embarrassment. He would also sometimes attempt to touch his special educator. Repeated intervention and counseling was unable to solve the problem.

**Solution:** A Power Point presentation was created using ABC's picture. His picture was superimposed on a picture of a shopping mall and another picture of a bathroom. Red dots were used to mark the 'do not touch' areas in public places. Green dots marked the same areas for the bathroom. Similarly a large red dot was animated to appear over the teacher's picture to signify 'do not touch'. This served to concretize the entire concept and ABC, after a few repetitions of this presentation stopped touching inappropriately.

### **Leisure time activities**

Computer games, music, art software and the Internet are some of the best tools at my disposal. Children with special needs were taught to use the Internet to search for information and images. They truly enjoy doing a Google search for pictures of their favourite cricketer, car or food etc. Art software is also a great hit with them. *Games act as great rein forcer and I have been awe struck to see a very hyper active child, sit hours, playing "ice."*

### **Methodology**

While putting together these presentations, the **VAKT** (Visual, Auditory, Kinesthetic and Tactile) method has been kept in mind. The power points provide visual and auditory inputs. The kinesthetic and tactile inputs are provided through the control of the mouse or touch pad and the use of the key board.

1. Using the mouse, touch pad and key board also strengthens the intrinsic musculature of the small muscles of the hand and especially the fingers.
2. Typing with both hands encourages bi lateral hand usage.
3. Several visual – perceptual activities get reinforced, especially when typing: figure grounding (the skill to focus on the relevant key, to the exclusion of the others), eye –hand coordination and finger dexterity.
4. Logging in and out of the Vasant Valley School system has taught the children sequencing and recall.
5. Number and alphabet recognition is enhanced through the use of the key board as well as through various interactive soft ware and programs.
6. A whole new world of inexpensive and effective communication has been opened up to these children through appropriate use of e-mail.

### **Inclusive Projects**

A project has been undertaken with the mainstream Class 7 students to create animated ‘*Social Stories*’ to teach the children appropriate social behavior. These social stories are a truly collaborative and inclusive project. The main stream classmates of children with special needs are being taught Flash Mx and have scripted and animated these stories based on some areas of concern that were identified by the special educators. This is not only helping the children from the mainstream to learn about animation but also giving them a new perspective and compassion for their classmates who have special needs.

#### **Project: Social stories**

Students of Class 7 were shown a Power Point presentation on Social stories. They were asked to create animated social stories that would help children with special needs to learn new skills or to teach appropriate social behaviour. It was explained to them that they were taking on the role of teachers.

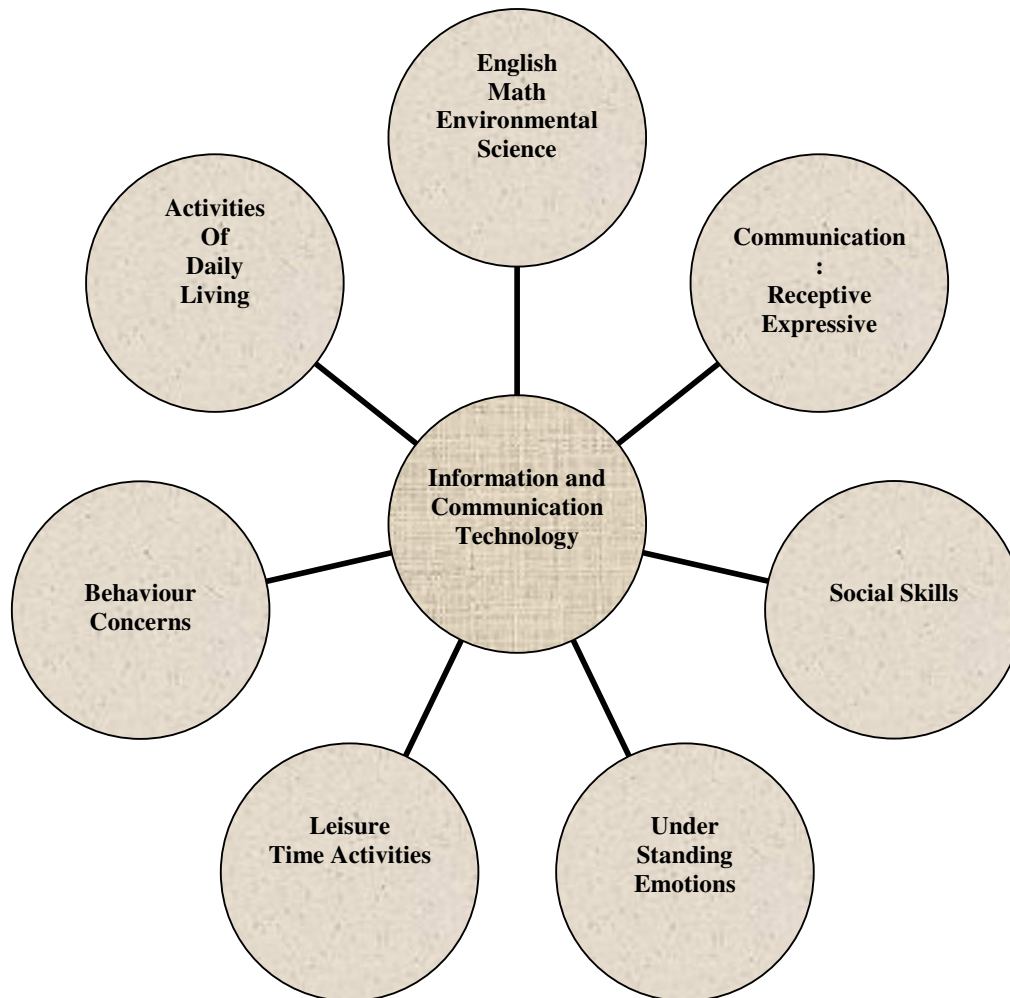
Students responded very positively and several of them came up with skills they thought were important for them to teach.

P, a student of Class 7 reported that she had seen a child with special needs struggling with buttoning his shirt and dressing appropriately and volunteered to create an animation to teach these skills

Another student, J, said that he would like to do a story titled ‘If I am lost’ as one of the children with special needs had got onto the wrong bus after school.

‘Going to a restaurant’, ‘Going to the dentist’, ‘Lets go shopping’ and ‘When I am Sick’ are some of the other stories being created by the students.

The diagram below gives an overview of how the various competencies an individual needs to develop are being taught through the medium of computers in Vasant Valley School.



Technology when used correctly can serve as an invaluable aid to the learning process. It both complements and supplements traditional teaching methods. Computers are rapidly moving away from the conventional role of being a business machine to being a center for social networking, education and entertainment.

*My greatest achievement is certainly not the innovation in teaching that I have made. By far the greatest achievement of ANY teacher is the satisfaction of knowing her students are benefiting from the strategies used. For me, there is another even greater reward: watching a smile spread on the face of one of my students. The smile rises in the eyes and quickly reaches the mouth! Often there is an added bonus, " Thank You, Mrs. Singh, I love you!"*