

Building As Learning Aids (BaLA)

School is not merely a structure or a building. It is not only the assembly of children and teachers. It is a specialized, indeed, a very special place for children to learn and grow. It is a place that shapes their thoughts, one where they can ponder, question and share experiences. It makes them wonder and be creative. It propels them to raise questions and explore answers, identify problems and attempt solutions. School enables children to interact with their environment and give direction to their future.

The responsibility of school is enormous. It should have an environment where teaching and learning become joyous experience for both teachers and children. The physical built environment, which includes not only the building and its interior spaces but also the exterior spaces and land space, play a crucial role in making this experience more meaningful.

BaLA is an innovative concept towards qualitative enhancement in elementary education through intervention in school building infrastructure. Since buildings are the most expensive physical assets of a school, efforts should be made to derive maximum educational value from them. Thus, BaLA is about exploring uniqueness of three dimensional space as a child friendly learning resource for all children.

The building elements of normal concrete shapes are modified innovatively to involve children creatively. The different elements of BaLA may be located in interior and exterior spaces like classrooms, corridors and backyard so that a variety of learning situation are generated across the school space. The built structure of the school can also provide shelter during educational activities.

The intervention takes place at two levels

- Designing built elements like floor, wall, ceiling, door, window, furniture and playground as learning aids
- Developing indoor and outdoor spaces to create self learning situations.

Initially, SSA consulted VINYAS – Centre for Architectural Research & Design, New Delhi to pilot various innovative element designs, construct and erect various elements in the school buildings and in the campus. The BaLA ideas were developed after a comprehensive research in the following areas:

- Need for facilitation of all round growth and development
- Need for literacy environment
- Problematic areas of comprehension in teaching and learning
- Socio-cultural-educational background at home
- Spatial aspirations from school
- Natural behavioural patterns in school space
- Construction, repair and environment enhancement of the school building

Apart from constructing the elements of BaLA, orientation trainings were organized for both engineers and teachers on how to develop spaces in accordance with pedagogy and use building elements and open spaces effectively in the school for improving child involvement and education respectively.

State govt. sanctioned 100 schools during the year 2006-07 for developing school building elements as per BaLA and allotted Rs. 2.5 crores to SSA Gujarat (Rs. 2.5 lac per school). An additional amount of Rs. 50 crores was sanctioned for 200 schools in the year 2007-08 by the State Govt.

The different elements which have been considered and constructed by SSA in different schools of Gujarat are given below:

Mystery Wall

Mystery wall in the school corridor offers opportunities of peeping and hiding. Children love to disappear and watch others from behind or play hide and seek or such other game.

Alphabet shape Board

Alphabet shapes can be used to draw pictures of objects beginning with the same sound as the alphabet. This is a fun way of learning alphabets and recognizing their shapes. Children can use these alphabet pictures to write words and sentences. This can become an interesting language activity.

Pipe Phone in Grab Bar

A grab bar on the ramp or in a corridor is a useful provision for differently able children. Not only it supports and guides their movements but it can be used as pipe phone. The pipe should be at least 5 cm. diameters, while the length can vary to suit its basic function. Both the ends should be hollow and all obstructions in the length of the pipe should be eliminated.

Grooved Writing Patterns on Walls

Learning materials in a tactile medium are useful for all children, particularly for the visually, hearing or speech impaired. Grooved writing patterns on walls can help all the children to trace and strengthen their finger muscles. This will strengthen the movement required for writing an alphabet shape and enable feeling it (the shape) through finger or wrist movements.

Measurement Scales

The length width and height of the classroom, doors and windows can pointed so that children know how much is 2m, 3m or 6m in the real world. Similarly a unit length of floor panel can be used to estimate the entire length of corridor. With a measurement scale pointed in the space around them, they can even measure themselves or objects that they use frequently.

Door Angle Protector

Under the door shutter of class rooms Angle Protector is painted that can help to develop sense of angle measurement. The door shutter swings a range of angles when it opens. This can be made in a variety of ways – simply paint the angular lines, or make floor panels while repairing or making a new floor.

Fractions Aids

It is always helpful if the children can see or touch physical object to understand the concept of 'whole' and its 'parts' of fraction. Fraction can be made on window grills, tiles on walls and floors.

Tangram Tiles

Tangram tiles are based on the geometric puzzle of seven pieces. A square is cut into seven geometric shapes, which can be arranged in thousands of ways to create human figures, animals, geometrical shapes, alphabets and so on. The essential condition in a Tangram puzzle is that all the seven pieces must be used to make shape. This knowing can make geometry a lot of fun.

Planetary Orbits on Ground

Children enjoy revolving around poles or anything that allows circular motion. The space around a flagpole or pillar is a suitable place to locate the design. The nine orbits can be divided into four quadrant to represent seasons. Each quadrant is further subdivided in three so that there are a total of 12 equal sections which can represent the 12 months of a rotating earth. It is the three-dimensional relationship of children (as planets) to the pole (as the sun) that will help them understand various concepts.

Map of Classrooms

An outline map of a classroom may be made on a horizontal surface like teacher's table or the floor. This will introduce them to a map by linking it to their immediate surroundings.

Map of the School on a Platform

A large outdoor floor map of the school allows children to observe places, objects, routes and trees around them and locate them on the map. This can be made on a horizontal or vertical surface preferable in a central location from where children are likely to pass every day and see the entire school space. The map should be oriented in the same direction as the school.

Map of a State Country

The large outlined map of a state/country lined with bricks and mud/sand filling the inside enables children learning by doing. Children can create their own mountains, valleys and rivers. They can make ships in the ocean and cars or trucks on land. In doing so they can also

get a sense of the direction they are moving in. The experience thus generated to understand shapes and forms is likely to be more lasting than mere textbook information.



Fig: Open Air classroom in **Amphitheatre**

Dot Boards

Dot boards are writing surfaces with dots, which can be joined in a variety of creative ways using chalk. The dots can be placed regularly or in a staggered manner. They can be painted, engraved or embossed. These boards can be used for drawing or doing activities related to mathematics, language and art.

Grid Boards

Grid Boards have a matrix of equal sized squares arranged in 10 rows and 10 columns. They can be made on walls, floors or glass window panes. Since such grids are in the built space they have the advantage of being available for children to use at all times. They can be used for activities in mathematics, language, mapping art and skill development.

Board games on floors and seats

Board games can provide an important context within children learn to follow rules, develop strategies, innovative techniques and at the same time learn to win or loose with dignity. Permanent and accessible spaces can be used for creating built-in formats of familiar board games.

Mirror on Walls

Mirrors teach children many concepts, such as what is left and right, image inversion and reflection etc. Apart from the fact that they are easy to integrate with the building, they also have potential to be an educational toy. They can be fixed vertically on a wall with enough space for children to move back and forth in front of a mirror as they observe changes that occur with movement.

Jalli Wall

Jalli is a panel of small perforations in an opening. A Jalli can make interesting patterns of sunlight on walls and floors. Besides it has a thermal advantage. A Jalli allows both air and sun to enter a space. However the intensity of sunlight gets diffused when it passes through the Jalli. Ideally it should be located in sun facing sides of corridors.

Counter Window

This is the space where children can simulate the adult world and prepare themselves for their future roles. It is a place where they can play as postmasters, shopkeepers or bus drivers or use it as a cinema or train ticket window.

Writing Aid on Window Security Grills

Writing Aids use different built elements to provide a variety of ways and spaces for children to practice wrist and finger movements required for writing. The rods or bars in windows, on railing or along the steps can be molded into different patterns of varied complexity. These patterns can be based on the wrist and figure movements required for writing alphabets.



Inclusive - Building as Learning Aid (i-BaLA)

To make the BaLA elements more child friendly and inclusive, i- BaLA was adapted for Hearing Impaired, Mentally Retarded, Visual Impaired children for developing inclusive settings in schools. The key features adopted for i-BaLA are location, size, content, eligibility, colour scheme, Orientation Reference Locator (ORL), line and edges etc.



Fig: Overall look of school campus after implementing BaLA