

To Study The Impact Of Spaces For Effective Learning

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Article Info

Volume 83

Page Number: 6906 - 6910

Publication Issue:

May-June 2020

Article History

Article Received: 19 November 2019

Revised: 27 January 2020

Accepted: 24 February 2020

Publication: 18 May 2020

Abstract:

Anaerobic degradation of coke oven wastewater with starch as co substrate was carried out in an UASB reactor seeded with anaerobic sludge of VSS concentration 45000mg/L obtained from anaerobic digester treating starch effluent of sago industry. The reactor was operated with synthetic starch and coke oven wastewater at various mixing ratio viz. 95/5, 90/10, 85/15, 80/20 and 75/25. The COD and phenolics (mixture of phenol and chlorophenols) removal were monitored. Removal efficiency of COD were ranging between 70 to 78% and phenolics removal efficiency ranged among 73.3 to 82%. Maximum of 82% of phenolics and 78% of COD removal efficiency were obtained at a mixing ratio of 85/15.

Keywords: Anaerobic degradation, UASBR, coke-oven wastewater, Co-substrate

Introduction:

The overall performance of the students and their studies indicates that the physical spaces have a very great influence on their performance. After coming across various researches, it has been seen that the surrounding environment that the students learn in create an impact on their minds. The designers and the professionals should make sure that the design of spaces can well affect on the effective learning of the child, creating innovative spaces that means blending the nature with classrooms, creating tranquilizing spaces etc.

This will thus help in creating emotions, the feeling of safety and enhance the students to learn. In India, the disputed facts are the designing and planning. Some designers are good at designing schools and other professionals are planning according to the standards. Thus, the child's development is not given the first priority. When learning spaces meets the environmental and educational criteria the teachers and students will tend to learn better. Hence, the efforts should be made to create such innovative spaces to promote the child's effective learning.

AIM:

To study the design of spaces for effective learning.

OBJECTIVE:

Through the study of spaces this paper will help us believe that a student is more responsive to the teachings in spaces that helps in exploring the given value-based education by offering an enabling surrounding to the young minds.

METHODOLOGY:

The methodology will include studying the different schools as case studies from India and analysing it according to the designing considerations. The required data is collected through secondary sources.

LITERATURE STUDY:

In the medieval period of child's growth, he / she was sent to Gurukul that was situated in the forest under huge shadow of trees that was far away from the villages and kingdoms which was considered as a community for the learning environment.

Later in the 12th Century the teachings were done on the basis of the religion i.e. mainly the Buddhism, Jainism, Hinduism. The destination for such

teaching were the religious places which had become the center of importing the knowledge.

Then came the Mughal rule and the learning style took a change from an individual learning to group learning. The destination for such educations was generally attached to Mosques where the Islamic education system was followed. When India was free from Mughal rule the religious education, system came to end In the late 20th Century, whole nation followed the necessary changes needed in school design. Since then there has been many reforms and till date the designers are striving hard towards the betterment.

CASE STUDY 1:

Nirma Vidyavihar school

Location: Ahemadabad



Figure 1: Front facade of Nirma Vidyavihar

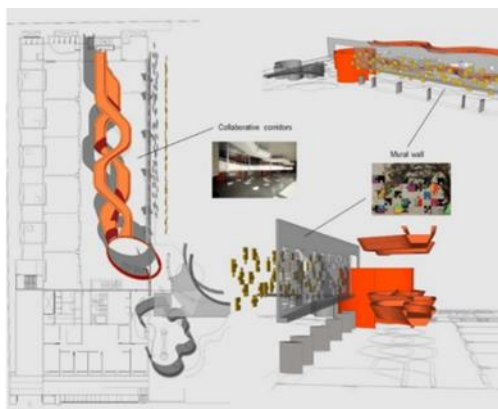


Figure 2: Special Features from Vidyavihar

Nirma Vidya Vihar is an initiative by the Nirma Education and Research Foundation (NERF), is designed in order to get familiar with the

surrounding environment by providing value-based education to young minds. The aim is to achieve the child's potential. This school is situated in Ahmadabad and it consists of various sections like pre-primary, primary and secondary school sections. The school is designed in a very interesting pattern that provides well ventilated spaces with extracurricular activities. The planning of the school has a free flowing and active geometry that includes many playful and bold elements thus making the spaces vibrant. Though the free-flowing planning is interconnected with en-number of spaces yet, they are directional and precise. The designing and planning of spaces have straight rectangular functional spaces with the free flowing elliptical and curvilinear service areas. To avoid the experience of long corridors that are uninteresting just like other schools, the designers have tried breaking the monotony of such spaces and converted them to collaborative spaces. The most interesting part of the school is the "mosaic mural wall" "the scrap arc" "the puzzle facade" and "the inverted tree installation" which will broaden the vision and the thinking ability of the children. The precisely planned paths that are separation from the foyer plays in a very dramatic manner, there's a quaint staircase that takes you down to the basement, also a bold elliptical foyer of the school leads to the triple heighted auditorium. This thus proves that the well-designed paths are guiding us the way to various spaces. The shadow of the puzzle wall makes the corridor playful. Since the wall is designed so that it has voids of puzzle shape.

Conclusion-Schools should look forward to develop such jolly areas that will help in the child's brain development. The students of Nirma Vidya Vihar can have all of these above described experiences in one place. The ability to think after looking at the inverted tree, the ability to create design-oriented mind after looking at the mural walls, to understand the importance of spaces that are connected with the levels. All of the above activities are performed

exuberantly. Thus, helps in effective learning of a child.

CASE STUDY 2: Yellow Train School

Location: Coimbatore



Figure 3: Ventilated Jali corridors



Figure 4: Well-designed school premises

Yellow Train School in Coimbatore was so designed that the main aim was child's emotional, social, physical, psychological development. All of these were given the highest priority. Although the school had to follow the Waldorf system of education but the challenge was to plan according to the Bye Law's laid by the Tamil Nadu's Board of education. The following school was designed for the classes

from pre-primary to higher secondary. But the pre-primary and the primary section was given more thoughts during designing. Hence the designer's believed that the child's basic brain development begins with these sections. Hence the planning and interiors should be such that the child is guided in particular way that helps in effective development. As Coimbatore being a part of the hot climatic region, the play spaces are brought indoors. The outdoor spaces are accordingly designed that they cast maximum shadow in the day time. The floors are connected to each other through ladders or swings in some areas to direct students in an interesting manner. The jail walls are creating a fancy aesthetic look and helps in keeping enclosed spaces lit throughout the day. The floors are painted with games like snakes and ladders, also the tiles are fixed in an abstract pattern that creates a path leading to something. The thought behind designing classrooms works out very well. Each class is divided into three parts, one in which the standard pattern of learning is followed i.e. the teacher teaching on the black boards. The second part is so designed that the students can sit together in a group and perform group activities and the third part includes a display area for the students to display their individual work.

Conclusion: - The inter connectivity of the space helps in keeping the mind engrossed in a particular work. The practice of connecting the indoor and outdoor spaces workout well. Thus, the child's habit of playing continues. Such spaces are helpful for the children in developing the group work skills and help them making bold. It keeps the space continuously busy as they have designed spill-out spaces, collaborative corridors etc.



Figure 5: Plan showing the connectivity

Figure 6: Floors are connected with swings

Table 1: Comparative Analysis Table

<u>Influential factors</u>	<u>Case study 1:</u> <u>Nirma Vidyavihar school</u>	<u>Case study 2 :</u> <u>Yellow Train School</u>
Geometry and organizational principles	The rectangular linear corridors are the highlighted features in the design to keep the collaborative	Traditional teaching styles are contemporized in designing such that helps in child's effective learning
Light and shade	Ample daylight is received due to punctures made in the walls	The concept of Jali provides daylight throughout the day
Materials and construction techniques	RCC construction with some of walls painted with murals to improvise thinking skills	Exposed brickwork in some areas in order to create jali effect in the walls and Rcc slabs.

CONCLUSION:

The topic about the learning spaces and their effect on child has been given more important after carrying out many researches. Being aware of the fact, what is still lacking is the child's engagement into development is not given more importance. The findings presented after going through this paper proves a very positive and a significant point that the space in which the child and teacher learn is more responsive to the environment, group discussions that helps into an effective learning. The paper also brings us to an aware that we as architects shouldn't only fulfil the planning standards while

designing but also believe the user's usage of the space and therefore the impact of that space on him/her.

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