Nid Amaravati Infrastucture and Interior Planning Requirements - A Review

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Abstract:-
Problem: Many schools and institutions are lack of essential infrastructure and proper interior planning; faculties are not conducting practical sessions in campuses due to lack of infrastructure.
Purpose: This research aimed to determine the infrastructure and interior planning of an
educational campuses. As infrastructure is very important for students in their education process,
Students' thoughts, behavior, mentality was depending on interior design and interior planning and aimed to research on color psychology, and this research aims to discover strategy tools for infrastructure and interior planning.
Methodology/approach: First, we took feasible information from case study to know the strategy of today's education along with infrastructure, secondary data from websites, books, and articles were used. Second, the evolution of infrastructure and educational system is shown to understand its value and to know how it impacts on students and how important it is in our future.
Result: Expecting that everyone understands the importance of infrastructure and interior planning and provide well-equipped infrastructure along with proper furniture and interiors
Implication: Creating an innovative opportunity for students to change education method
according to modern infrastructure and understands the importance of interior planning and creates guidance on how to use modern technology for education purpose.

Keywords:- Educational Infrastructure, Interior Planning, Essential Infrastructure, Colour Psychology, Education.

I. INTRODUCTION

This entire research has been done keeping in view of the student's usage on infrastructure and what makes them feel comfortable and creates emotional connection. Interior Architectural design plays an important role in student learning. From the chairs students sit on to the colors on the walls, design choices can support an active learning environment. These design elements subtly reinforce a commitment toward student success. Many schools and institutions are lack of essential infrastructure and proper interior planning; faculties are not conducting practical sessions in campuses due to lack of infrastructure. Educational infrastructure is crucial elements of learning in institutions and universities high quality infrastructure and interior planning improves student out comes and helps with student psychology and reduces dropout rates, and other benefits. In the past and present government schools were built to meet basic functional and financial requirements colors like off-white, beige, gray and blue dominated most classrooms and school corridors. But today, modern educational institutions are focusing on color and design to help identity and improve teachers' and students' educational experience through the right interior choices.

II. WHAT COMPRISES EDUCATIONAL INFRASTRUCTURE?

Advanced lab with proper working equipment, computing resources, total number of computers and working better with high quality network, other resources such as printers, wireless net connectivity for use of laptops, smart classrooms, spacious and well- ventilated classrooms, libraries, study hall, assembly area, well-maintained sanitation facilities and dinning, furniture, and basic utilities etc.

III. ESSENTIAL INFRASTRUCTURES

These are some essential infrastructures to make educational place better;

A. Physical infrastructure
'Physical Infrastructure' stands for the physical facilities of the school and comforts the student. It is referred to buildings, grounds, furniture, and apparatus along with equipment's essential for imparting education. Time period required to reach optimum level 02-03 yrs.

B. Digital infrastructure
Digital infrastructure comprises the physical resources. Data, computerized devices, methods, systems, and processes. Digital infrastructure has become necessary to the functioning of society and the quality of life of its citizens. It is also helpful for fast learning. Time period required to reach optimum level 01-02 yrs.

C. Innovative academic & training Infrastructure for confidence building building confidence within students about the new education systems and innovations to reach heights. Time period required to reach optimum level 03-05 yrs.

D. Intellectual property infrastructure

Creating new knowledge and innovations to education systems by opening opportunities to students, server consolidation savings, improving student access so that students can access whatever they are working on from any part of the building, monitoring from afar, setting strategy. Time period required to reach optimum level 10-15 yrs.

E. Emotional infrastructure

Infrastructures should be part of students and it should create comfort and belongingness and connections; it can be interiors or any part of the infrastructures. Time period required to reach optimum level 10-30 yrs.

F. Networked infrastructure.

Network infrastructure devices are the components of a network that transport communications needed for data, applications, services, and multi-media. routers, firewalls, switches, servers, load-balancers, intrusion detection systems, domain name systems, and storage area networks are some network infrastructures. Time period required to reach optimum level 05 -10 yrs.

➢ School buildings, classrooms, playgrounds, and libraries are the most important and crucial aspects of school infrastructure. Spacious, refurnished buildings, well-ventilated classrooms and with good interior planning are a must in schools. Well-equipped labs enable them to perform lab activities more effectively. Facilities like extracurricular workshops, libraries, halls, assembly area and proper sanitation facilities are some of the infrastructure essentials that every school should provide to its students. It is proven that overcrowded and stressful environment can affect the children's learning capability. The site for educational institutions are crucial concern as noise and temperature levels are said to affect the understanding levels in students.

IV. WHY EDUCATION INFRASTRUCTURE MATTERS FOR LEARNING

➢ Needs of education institutions
- School capacity
- Amenities and utilities
- Demand for dormitories
- Seismic hazard
- Dropout and repetition
- Age – grade distortion
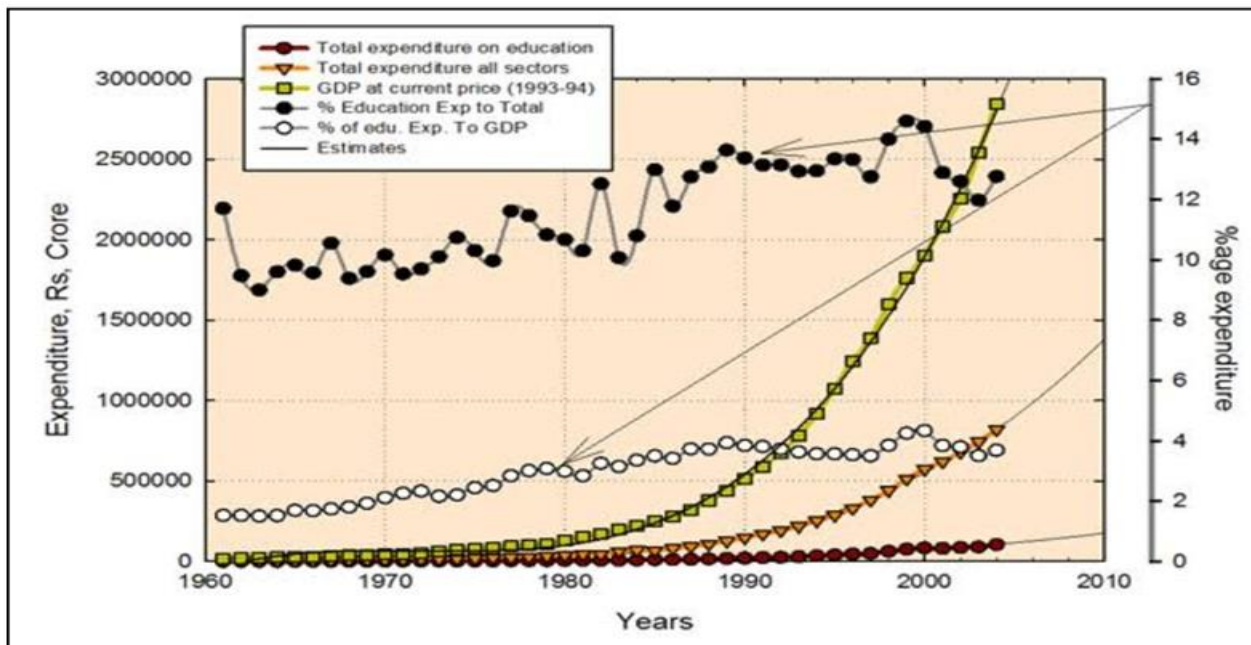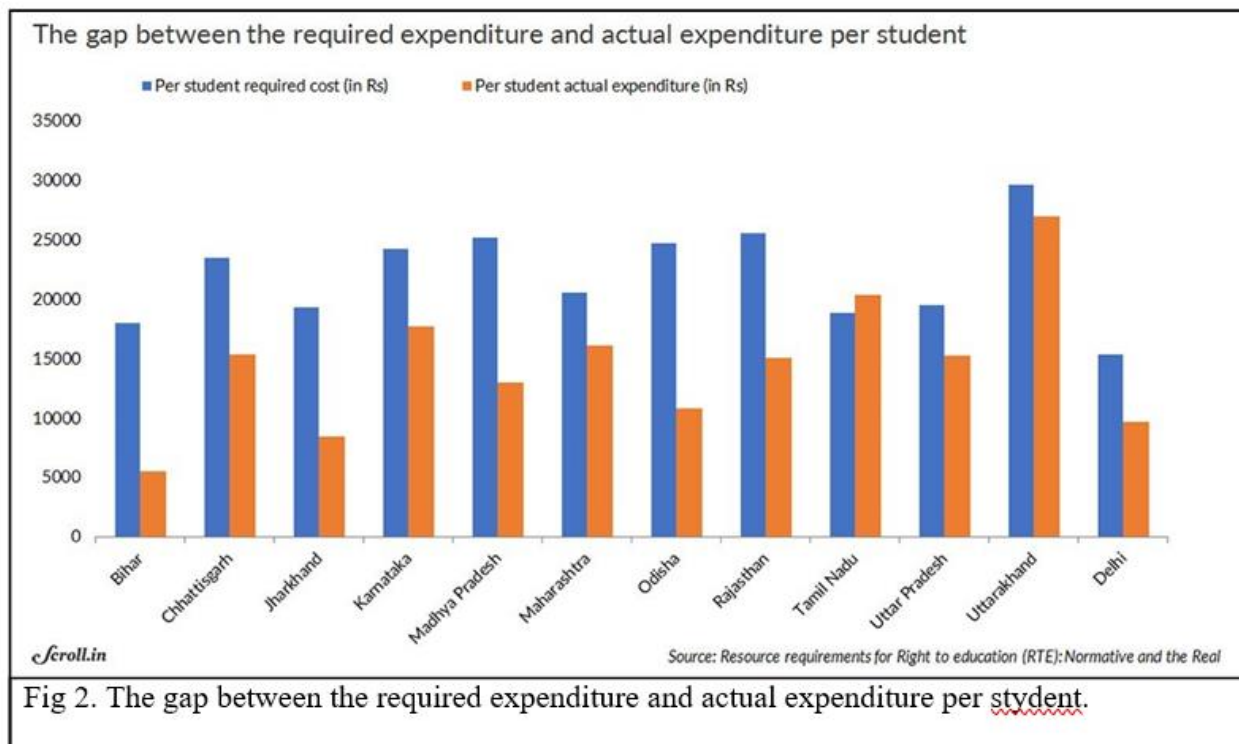- Student performance
- Marginalization
- Urban – rural divide

Fig 1. Break-up of total expenditure on education in India retrieved from S&T human resources

Fig 2. The gap between the required expenditure and actual expenditure per student.

V. NETWORK REQUIREMENTS

Averaged Wired CAT6 or CAT6a data, 1GE minimum, connections are necessary at the teaching station area, the projector/display, the webcam, and to the fixed student computers as applicable. CommScope Giga speed CAT6 and 6a patch cables are required for all network connected devices. Classrooms will include minimum 2:1 (devices: user) WIFI density.

VI. IMPORTANCE OF INTERIOR PLANNING

Interior Architectural design plays an important role in student learning. From the chairs students sit on to the colors on the walls, design choices can support an active learning environment.

These design elements subtly reinforce a commitment toward student success. Interiors make students feel friendly with environment and they would like to spend more time interiors and colour psychology impacts on student's behavior. Different interiors show impact on student in different ways. It makes people inspirational and increase motivation and creates emotional connection.

Generally, classrooms should be sized in a 2:3 or 3:4 width to length ratio. Long, narrow, "railcar"-style rooms are not acceptable. In classrooms where the instructor's workstation is movable, adequate space must be provided to allow the workstation to be positioned at least 3 feet away from the teaching wall. In classrooms with fixed tables and/or fixed seating, the front edge of the instructor's workstation must be at least six feet from the front row.
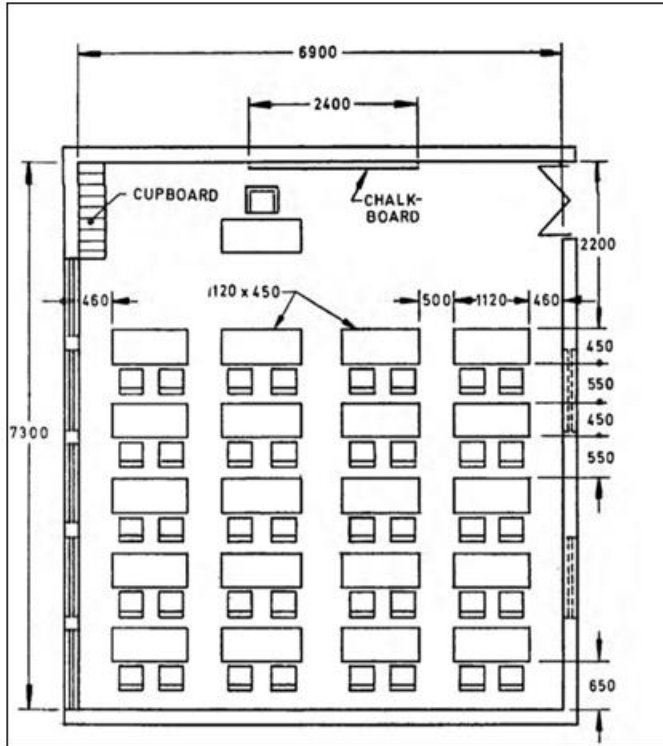
Figure3. Dimensions of classroom retrieved from Indian Standard RECOMMENDATIONS FOR BASIC REQUIREMENTS OF SCHOOL BUULDNGS IS: 8827 – 1978 all measurements are in millimeters
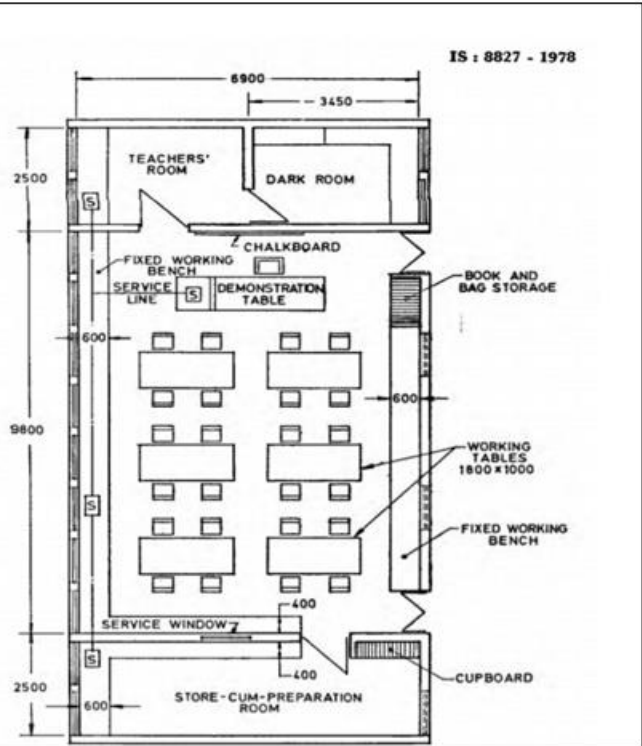
Figure 4. Dimensions of classroom with lab retrieved from Indian Standard RECOMMENDATIONS FOR BASIC REQUIREMENTS OF SCHOOL BUULDNGS IS: 8827 – 1978 all measurements are in millimeters
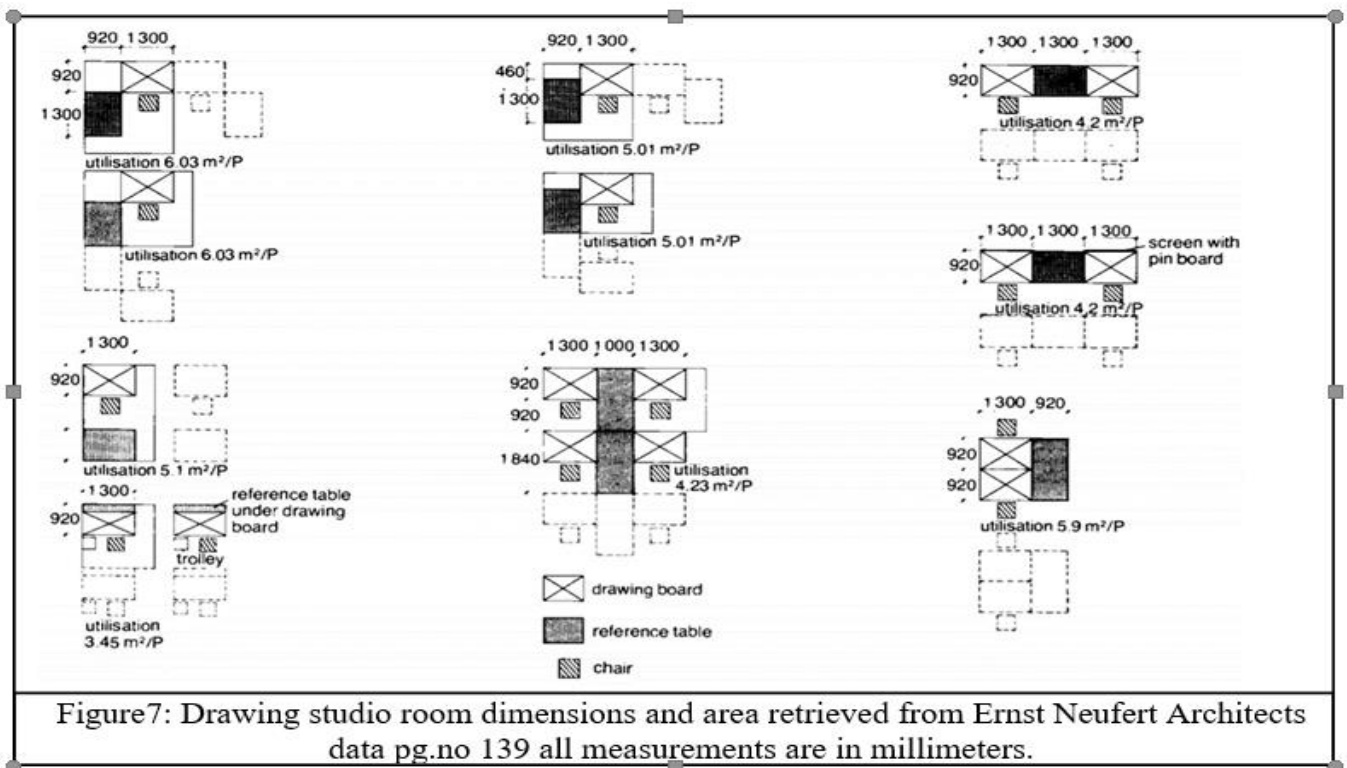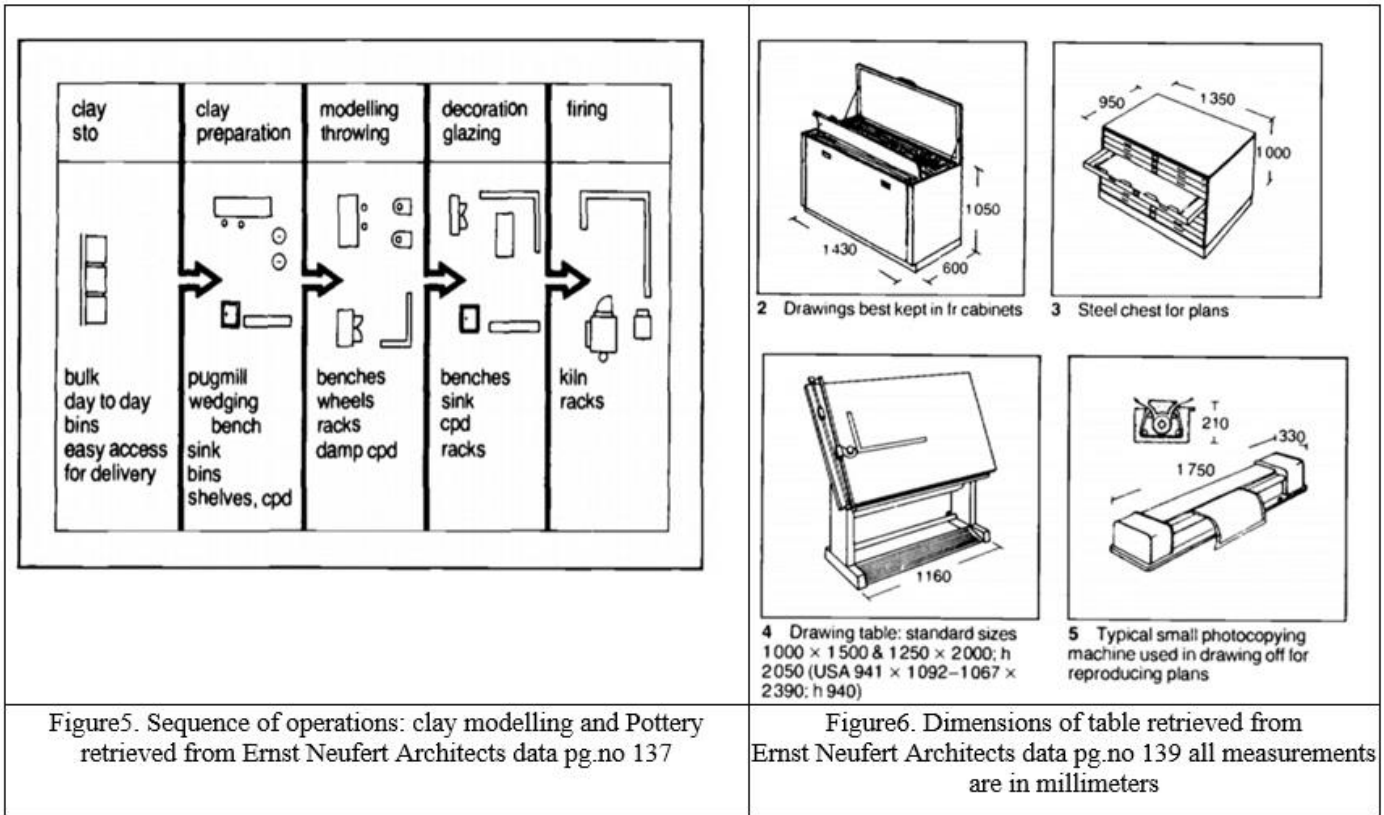
A. Design Studios

Studios should be right next to workshop consider exclusion of noise and dust. Rooms should be properly equipped with models, books and space for plan sheets and students' lockers and good lighting essential (natural and artificial)

B. Fine Art Studios:

These studios required large spaces for painting and sculpture and must have good natural light with high rises windows equal to 25-33% floor area with N or E aspect.

C. Stores:

Methods of storing range of good materials needed to be studied closely as should areas required house completed works before exhibition or disposal. Also stores should be sites near workshops consider proper conditions of heat and humidity where these may be determined to materials being stored if not held within reasonable limits e.g.: timber, clay, plaster, textiles.

Figure5. Sequence of operations: clay modelling and Pottery retrieved from Ernst Neufert Architects data pg.no 137

Figure6. Dimensions of table retrieved from Ernst Neufert Architects data pg.no 139 all measurements are in millimeters

Figure7: Drawing studio room dimensions and area retrieved from Ernst Neufert Architects data pg.no 139 all measurements are in millimeters.

D. How Interior Planning Is Helpul In Campus Design?

- Opening interior spaces: Floor-to-ceiling windows, skylights, and light pillars bring daylight into every room, even those located at the center of the building and it makes these rooms feel brighter, attractive, and more welcoming to the students. They will look forward to studying in these spaces.
- Using color and furnishings to brand the building
- Supporting student artwork, inventions, and accomplishments

When students feel a greater connection to campus, they are more likely to treat each other with respect and get involved in the college community.

- *Designing Flexible Classrooms:*
Flexible classrooms are more about than having fun seats or variety of different seats. It is about the collaborative learning and prioritizing student's needs.

Benefits of having flexible classrooms is that it shows how much space does children need when they are group studying and how students are grouped during learning. They need not to go around the campus to access library.

flexible rooms are that it makes better use of the space outside of normal class hours. Students can work on project works in between classes. Students feel good working in such multi-use spaces and improves there collaborative learning.

VII. COLOUR PSHYCOLOGY

Red: Stimulant; provokes conversation; improves concentration.
Orange: Uplifting; stimulates critical thinking and memorization; increases appetite. Yellow: Promotes awareness; helps to release serotonin for happy mood.
Green: Calming effect; stress reliever; promotes concentration.
Blue: Increases creativity and alertness; improves overall health, memory, and mood; lessens fatigue and depression.
Violet: Represents wisdom and authority; respectful.
Pink: Soothing; reduces heart rate; energizing effect (with saturated shades) or comforting effect (with paler shades).
Black: Promotes sophistication, security, and efficiency; the absence of color. White: Conveys sterility, simplicity, clarity, and purity; hygienic.
Color in schools have an enormous impact on students' emotions and mindset during class hours.
In the past, schools were built to meet basic functional and financial requirements colors like off-white, beige, and gray dominated most classrooms and school hallways.
Classrooms – Blue is one of the most effective classroom colors. White can also be a good dominant color for a classroom if it's accompanied by a colorful accent wall. Yellow (pale) or lighter shades can be effective in maintaining students'

awareness in the classroom.
Libraries – Green is a great option for libraries, where students need to focus on their studies.
Gymnasiums – Red and highly-saturated pinks may encourage the necessary physical responses in a gym setting.
Cafeterias – Orange's impact on appetite makes it an appropriate color for a school cafeteria.
Offices – Authoritative areas such as the principal's or guidance counselor's office may benefit from the atmosphere of respect created by violet tones. violet colour can be a great for auditorium as well.
Exposed Structures – Black is ideal for concealing any exposed structures, as it creates the sense of void.
Corridors and Lobbies – Learning and concentration are not the main objectives in public spaces like hallways and reception areas, so students can be little freer with these spaces.

VIII. CONCLUSIONS

1960s education system is different than 21st century education system. There not much infrastructure in campuses or institutions as all most all are govt buildings.

Usage of POP is in wide range as they use to create models with it and use it in place of many PVC models that are available in this generation, mostly they did manual work and there are a lot of libraries where students used to spend their time mostly 30% students in class and 70% students in libraries.

Records and paperwork replaced computers. Students felt comfortable with this kind of education and less infrastructure. Later, future generations started to adapt to the new technology and started with innovative infrastructure like smart class, 3D prints (3d prints replaced POP models and manually made models) these made students way more creative, and they can reach throughout the world and move with new world's infrastructure "adaption makes live better" and made education system easier.

30% students in library and 70% students in computer labs making their studies easy and better. Computers replaced all manual works. 21st education system is way higher than 1960s infrastructure plays big role in today's world. Our future is totally going to be depend on computers and students might not have emotional connection with campus and infrastructure.

Everyone starts to educate themselves and faculty might replace by robots and everything depends on computers and displays. Online education might be the primary focus than practical study. Interiors make students feel friendly with environment and they would like to spend more time interiors and colour psychology impacts on student's behavior. Different interiors show impact on student in different ways. It makes people inspirational and increase motivation and creates emotional connection

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