

Essential design standards for contemporary school courtyard as necessity to advance the arts and technical schools in Egypt

**Ashraf Hussein IBRAHIM, Dina Fikry GAMAL,
Heba Ibrahim MUHAMMAD**

Interior Design and Furniture Department, Faculty of Applied Arts,
Helwan University, Egypt

Abstract

The contemporary school yard is an influential element in the development of many of the student's mental and emotional perceptions, achieving psychological balance for him, and enhancing the various aspects of his personality in general and for the student in the industrial technical education stage in particular, due to the values and design criteria it contains that make it the scene of many diverse and theoretical activities of the teacher. And the student, and previous studies have shown that a number of factors contribute to reducing the chances of success, the most important of which is the school climate where the student can learn a lot without realizing it, through his presence in a rich educational environment, The one who focuses on psychology and social ergonomic engineering enhances his intellectual and creative capacity, and this is what matters to the science of architecture and design arts.

Keywords

Essential Design, Contemporary, School Courtyard, The Arts, Technical Schools, Egypt

Introduction

The design of external spaces in educational environments is one of the most important areas of design and visual arts in general, as it is an art that has its own aesthetic standards and controls, which are closely related to the environment in a way that serves the quality of the student's life and well-being, and in light of the current global and local interest in the environment, research and work to protect and preserve it. Study and analysis For the design standards for the educational environment outside the school building, represented by the schoolyard and its natural and structural elements for the industrial technical schools in Egypt as one of the most important sectors of education affecting the national economy in Egypt; Industrial technical secondary education represents a self-ended stage for most students, which is the pre-university stage; Therefore, it is a stage that constitutes the first seed for handicrafts and traditional and traditional industries as a result of preparing human cadres trained to upgrade the level of these industries, and the interest in that educational stage and its elements is from the development of mental capabilities, technical skills, aesthetic sense, behavioral evaluation, crystallization of thought, etc. ,, schools are not effectively present in us, here, The problem is that art schools graduates are now far from keeping pace with contemporary developments, so their products come in a form that lacks a lot of aesthetic sense and creativity, and thus is unable to compete with the global market, but the local market at times, and the educational environment is external and not only the internal environment in the building School, is one of the reasons for the failure of the process Education in those schools.

In the scarcity of interest in the “Statement of the Problem” design standards, and the research problem of the artisanal schools of industrial technical education lies, despite its extremely important impact on the student, as it is his first impression, and the place where the student begins his studies day and spends a period of time not less than 20% From the time of the school day divided Between the morning queue and between sports education and many other activities, as this problem arose as a result of field visits to some industrial technical education schools in Cairo, and it was also noted that the industrial technical schools' obtaining accreditation for the quality of education has become insufficient to achieve the overall quality of the educational process, as the accreditation items did not include On the design criteria for the school site and its extinction to **The extent required. The research raises several questions, namely:**

1. Was the yard planned for the Technical Secondary Schools in accordance with governing design standards that meet the requirements and needs of the student?
2. Does the yard environment contribute to the secondary stage of industrial art schools in achieving the educational goals and the development of
3. Technical skills of students?
4. Does the design of the courtyard for the technical high school industrial schools affect the promotion of the handmade and traditional industries for the art education student?
5. Does the design of the schoolyard contribute to supporting the Egyptian national economy?

The research aims to find governing design standards that can be used in upgrading industrial education schools and raising the quality of their educational environment as a necessary step for the advancement and upgrading of traditional and handicraft industries.

The problem of the research lies in the result of a field study of some industrial technical education schools in Cairo, in which it was noticed the scarcity of interest in design standards in their artisans, despite its extremely important influence for the student and the teacher, and the research aims to reach governing design standards that can be used in the upgrading of industrial education schools and raising the quality of their schools. The research assumes that the interest in achieving the design standards for the school yard meets the psychological and academic needs of the technical education student and increases the value of the art workshop products of these schools as a result of stimulating his senses and developing the creative thought in the approach to exploring the methodology.

Research and conclusion of design solutions for them.

The research includes the concept of the courtyard, its types, and its natural elements (such as trees, plants, water, stones ... etc) and the structural elements. Such as benches, pergolas, fountains, external fences, sports stadiums ... etc. Using the design foundations of the courtyard such as unity, balance, rhythm, character, outward appearance, repetition, variety, color coordination, degree of compatibility, lighting and shade; In the pursuit of functional and aesthetic values; The design in its comprehensive sense is about organizing the simple parts in a complex form and in a technical way to reach an organization and thus a good coordination according to the needs and requirements of students and teachers of each school.

The research also included presenting the most important factors affecting the formation of the school yard, which are four factors (first: architectural factors which The study represented the design patterns of school buildings, which are buildings with a yard, buildings of mass, cluster buildings, city-style buildings, and the advantages and disadvantages of each of them, and secondly: environmental factors: such as location and climatic conditions such as solar radiation, winds, temperature, humidity and precipitation, which affect weight The relative presence of the elements of the yard and the optimal determination of the materials used in the floors and seating units, and third: psychological factors: which contribute to reducing negative feelings and psychological pressure among students and teachers, but increase their positive ideas, and fourth: technological and educational factors. The research was concluded with the conclusion of design criteria governing For the death of industrial education schools in Egypt, which are four criteria necessary to achieve the quality of student life and the educational process, namely: Functional, environmental and aesthetic criteria (expressive design relationships such as shape, color, texture, etc.) and finally the safety and security criteria, and the research reached drawing some conclusions, including finding a strong relationship between designing the schoolyard and improving social performance between students and some of them on the one hand and between students and teachers. And raising the technical and creative level of the industrial technical education student, which affects the raising of the efficiency of his industrial products.

Theoretical framework :

School yard:

The courtyard is an area of the space that is located inside or outside the building and is overlooked by some stone windows and is used as an architectural element to moderate the temperature inside the interior spaces of the building and to illuminate and ventilate it, it is planted in it and is provided with a water fountain and areas for sitting, and according to what the courtyard is surrounded by four or three Walls, the courtyard becomes closed or open The school yard is a rich environment in which the student practices the process of learning and teaching without feeling that, through his presence in it, it stimulates him to love learning and connect the parts to each other, and enhance his mental capacity such as memory, imagination and artistry such as criticism creativity and innovation); Therefore, the development of this environment is an urgent necessity to suit the modern educational trends that are based on psychology, social engineering and their contemporary fields, and this is what the design science and art are concerned with **Types of school yard:**

There are three types of school yard:

- 1.** The covered courtyard: It is an internal space that is not connected to the outer space and that is covered.
- 2.** The semi-open courtyard: it is an internal space connected to the outer space, which is not covered, and surrounded by walls on all sides.
- 3.** The open courtyard: it is a space connected to the outer space that is not covered, and from at least one of its sides, it is at the border of the street and can be used for all purposes.

Factors affecting the design of the schoolyard in the industrial technical schools.

There are several factors that affect the design of the schoolyard for secondary schools in general in industrial technical education schools.

Especially; the needs and requirements of the technical education student are very different from the general secondary education student.

The percentage of practical goals exceeds the knowledge to be achieved in these schools, and this is evident by studying these factors, which are architectural, environmental, psychological, technological and educational factors.

First: Architectural factors:

The architectural factors are among the primary factors affecting the coordination of the school yard of the industrial technical education schools, as the effect of the buildings surrounding the courtyard in the formation of its perimeter, area, multiplicity of its elements and its structural nature, and this is evident through studying the design patterns of school buildings as follows:

Design patterns for school buildings:

The physical and spatial patterns of school buildings vary according to several characteristics of each school, including the educational stage, the number of students, the philosophy and visions of the educational system, the learning methods used in it, in addition to Picturing.

Climatic conditions and the nature of the region (urban or rural). (School design -2005) There are four main design patterns for school buildings that form, by virtue of their location, the surrounding outer yards divided between playgrounds and courtyards, green cultivated areas, the entrance to the school, and side roads between buildings and others, and these types are buildings. Yard, block buildings, cluster buildings, city-style buildings, analysis of some of the world's award-winning school models: Yi Zhong De Sheng Secondary School Frank Yu School located in China in 2009, the design was awarded Claude Wong and Claude Wong. Design date to HKILA Design Awards, due

from the school's tenth anniversary celebration, where the appearance of the school as a whole was changed, the open spaces between the buildings were transformed into dynamic educational spaces and the focus was on educational content instead of the architectural framework of the courtyard, and the design of an educational environment was unconventional and unconventional. Instructions and preserving information and replacing it by presenting knowledge in an interactive environment that allows students to observe, explore and intuition. And other processes of human behavior of the learner. Singapore Art School - 2009 is one of the specialized secondary schools for the visual and theatrical arts that was distinguished by its amphitheater that was designed and handled as a sculptural work of art interspersed with trees acting as umbrellas, and the design is characterized by several advantages, including simplicity, clarity of services, movement paths, dynamic and high flexibility, which helped to achieve standards The sustainability of the site, in addition to the use of green façades to act as environmental filters in preventing dust, reducing glare, and maintaining the temperature of the spaces as the climbing plants cover an area of up to 400 meters and the design of wind direction helped to provide air currents with a low temperature despite the low wind movement and high humidity over there. The Dutch idea of designing seating units from English letters in the courtyard garden of Vollaerswzart took acompany, which was a three-dimensional model that was covered, Typographic garden, one of the secondary schools called artificial grass within a circular space with a diameter of 20 m. These huge letters form a distinct area that allows sitting and playing and social communication among students, as well as note the color consistency between the different elements of the court.

Second: Environmental Criteria:

The location of the school and the climate determine whether or not an outdoor courtyard is available; In desert areas with a hot and dry climate, we find that the building's containment of an inner courtyard is one of the best architectural solutions for obtaining natural lighting and

cold shades in the summer, but this courtyard must be subject to precise specifications if it is exceeded by the designer, there is no longer an advantage or goal of its existence. With regard to the external yards, or the outdoor arenas and sports stadiums, they are a necessity and a part of which the times of the educational and educational process must not be taken into account the design standards for students, as there are necessary requirements for each area of the schoolyard that must be met. In the area of the playgrounds and places of entertainment and entertainment, the ideal orientation is required to control the sun and the movement of the winds. Provide tree areas adjacent to the sitting and waiting units to provide shade and form a break for the unpleasant winds, and choose the appropriate direction to control the sun and the movement of the wind.

Third: Aesthetic Standards:

The student can learn and acquire aesthetic taste through the elements of the open educational environment in the school yard, starting at the entrance to the school and passing through the corridors and outdoor squares surrounding the school buildings such as playgrounds, parking lots, gardens, and other natural and structural elements, as the presence of water, trees and flowers in the school yard does not add the joy and pleasure for students not only, but also motivates them to love learning and wander and benefit from the components of nature, which enhances their aesthetic taste while developing the processes of creativity and innovation, and this is what the student of industrial technical education in general and those with decorative specializations in particular need to develop the aesthetic side in terms of sense,

taste and criticism in order to achieve the goals His sentimentalism and technical skill, so he can then produce many products of high technical value that are able to compete with the market. Aesthetic taste in its artistic connotation, as Edison defined it, means “the queen of the soul that pays attention to the appearances of beauty, responds to it with pleasure, and pays attention to the signs of deficiency and responds to them through aversion.” Edison also believed that taste, although it is innate in part, is subject to education and refinement. The issue of aesthetic perception and creative ability within the inner mind that the recipient has stored from what he has acquired from previous aesthetic experiences, such as what the computer stores of information, is called when needed, a moment of contemplation of the artistic work, and this process is called the creative ability (Hard Disc) that enables its owner to Feeling beauty by changing images and meanings and using the depths of feeling and unconsciousness, i.e. the conscious mind and the subconscious, and the structural elements represent an important part in crystallizing the thinking of the student in the school yard, because of their expressive design relationships (such as shape, color, texture ... etc.), each of which has expressive features Address the mind and thought and generate different feelings and emotions for the student. Color: Color is part of the contemporary design space and its function, as it comes to emphasize the design idea and inspire the aesthetics of its elements. Aesthetics is one of the most important aspects that color expresses upon achieving all the aesthetic factors, and the color aesthetics is achieved through compatibility, harmony and color harmony. The color has a symbolic significance in the school yard, as it fulfills an emotional need for the student, as it gives him an impression that remains stuck in the mind for a long time, just as traces of music and other audio arts remain, and the importance of harmony and contrast between neighboring colors also shows the importance of homogeneity and contrast between neighboring colors, homogeneous colors give a sense of unity, cohesion and comfort

as for the colors Contrasted so it gives some dimension and movement, and the transition of the gaze from warm to cold colors gives a movement inward, while its transition from cold to warm colors gives a movement outward, as well as the sequence of tones gives a sense of movement and transition. A: There are several factors that affect the shape of the structural elements in the courtyard, including the cultural and natural environments that are slow to change (which man lives in, and both environments create basic determinants and influences to reach a shape consistent with the needs of man, his thought and his culture.

Results:

1. There is a strong relationship between the quality of schoolyard design and between improving social performance between students and some of them on the one hand and between them and teachers in the school, as direct interaction with natural elements such as plants on the site without restrictions reduces psychological pressure and improves behavior and health.
2. Several factors, including architectural, environmental, psychological, technological, and educational factors affect the achievement of the design standards of the schoolyard.
3. Taking into account the design considerations when designing the school yard raises the intellectual and creative level of the products and industries of the technical education manual student
4. The direct interaction and daily friction of students with the elements of the yard lead to the consolidation of the principles of environmental awareness, sustainability and recycling of waste among students, which is reflected in the upbringing of generations that have awareness of the resources of the environment and their preservation.

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