

"Multi-purpose furniture" and its role in educational facilities in light of the current crises

Dr. Wael Mohammed Kamel El Sayed Afifi

Lecturer at Interior Design Department - Higher Institute of Applied Arts.

the 5th Settlement - New Cairo

Waelkamel2000@yahoo.com

Abstract:

- In light of the current crisis of the spreading epidemic "Corona Virus", with population growth urban expansion, small size of buildings and with the global financial crisis, cities have become narrower in population, and the need for innovative and compact solutions that fit the space became an important matter so most designers faced the problem of the inability of small spaces To accommodate enough furniture, the design should be created based on the needs of the community and solve problems to provide a better environment.

- Furniture is an inseparable and complementary element of architecture and one of the most important elements of interior design through which the interior space can be better used, and its design depends on its function and the space in which it will be placed. Furniture that is characterized by multifunctionality to meet the future needs of users, to serve more than one function to suit limited spaces. The importance of multi-purpose furniture design has emerged.

Furniture design is directly related to the interior space, so multi-purpose furniture is the smart answer to facilitate the study process and provide a good work space for the student in the educational origin, where it is difficult to work in small spaces, and in light of the Corona crisis, maintaining public health and appealing to social distancing , designers pushed to Inventing ways to reduce used workspaces and increase movement spaces, as furniture takes up a lot of space and costs a lot in a small space.

In educational facilities, we need multi-purpose pieces of furniture that provide comfort and ease of use for the student and have several uses, and work to adapt to different applications by transforming the spatial relationships of pieces to organize small spaces, and some also seek to acquire it as it can be converted from one form to another to add a creative aesthetic touch It adds character to the place.

So the research deals with:

- - The importance of multi-purpose furniture to increase space efficiency in educational facilities, as it is a major category of flexible furniture that helps to improve the use of the facility, provide comfort and space utilization, and is more flexible than traditional furniture.

- Achieving a good design system in the vacuum of educational facilities, finding non-traditional solutions to achieve comfort for users and functional efficiency, and finding a furnishing design style that achieves flexibility and is functionally, aesthetically appropriate with small spaces to reach the highest standards of utilitarian values for the person who uses the educational facility.

- - Design methods for multi-purpose furniture in educational facilities (the study spaces in the faculties of arts and engineering) and creating furniture pieces for the university campus in any space, because of the need for sufficient space from work surfaces and movement, and to take

advantage of it and use it for more than one functional purpose to facilitate the study process and provide a good work space for the student.

- Multi-purpose furniture applications, making designs and implementing models in educational facilities to solve the problem of small spaces and maintain public health.

Keywords:

(Multi-Purpose Furniture – Environmentally friendly furniture- Educational facilities (colleges of art and design) and their mission).

Introduction

While human needs are increasing, most cities are facing problems with the continuous population growth, and to achieve social distancing in light of the spreading epidemic of the Corona Virus (Covid), the spaces must be used well and provide comfort for the person, so we resort to taking advanced designs due to the emergence of new needs and jobs, as it is linked Furniture is the life of peoples and their sizes and the shape of their homes, and with the development of time and the rise in prices, the spaces have become small, so the designer created multi-purpose furniture, to increase space efficiency and reduce cost, by making maximum use of and expanding its functional range, and creating a piece of furniture that meets several needs.

Furniture is the mediating factor between the space and the user; Without it, the elements of interior design are not complete, as it is in the least space that performs many of the required job standards that must be achieved; Well-designed multi-use furniture increases the functional performance of the space; To serve more than one function within the space, our daily life, after the continuous developments, has become a source of inspiration for finding renewable solutions and ideas for designers.

The designer was interested in combining form and function, as the technological thought tended to design multi-purpose furniture in educational facilities to achieve more than one purpose and function and make the space adjustable and characterized by flexibility according to the future activities and needs of users.

Research problem: The research problem is:

Familiarity with the diversity and production of modern design methods for multi-purpose furniture, to create pieces of furniture with advanced technological methods that keep pace with the times and meet the needs of the market in light of the Corona crisis.

- To what extent can we benefit and find an innovative solution in the field of multi-purpose furniture design and highlight its role in creating and developing the community environment in the vacuum of educational facilities (colleges of art and design) with limited space, as it lacks a furnishing method that suits it functionally and aesthetically, in light of the Corona crisis and the availability of Social distancing, where there are no sitting places and available work surfaces related to the field of study and work of students in the courtyard of educational facilities, taking into account the space available for passers-by and their absence, providing sufficient work space and movement for the student, and the extent of its impact and benefit from it in facilitating the study process, and how to link it with field of interior design.

Research Importance:

- The need to go to innovative solutions to design multi-purpose furniture that exploits space to the fullest extent, achieves maximum benefit, functional efficiency and comfort for the student in the educational establishment, and fits the space, commensurate with the available spaces and exploits them, in light of the spread of the Corona virus, population growth and the financial crisis facing the world, with Benefiting from the designers' orientation to achieve functional efficiency and find non-traditional solutions and convenience for the user.

Increasing awareness of the importance and value of multi-purpose furniture to emphasize and preserve its idea in educational facilities, and to give it more space and opportunity to exploit spaces, and reduce costs.

- Develop the skill of designing multi-purpose furniture, and assessing it in the work environment (educational origin) aesthetically and functionally, and it is an experience for the student to assess and test design in the real world.

Research Objectives: The main objectives of the research are: The Research Objectives

- Realizing the importance of multi-purpose furniture and making the most of it in diversifying and formulating new designs that suit educational facilities, and not limited to modular furniture. After technological progress, saving space and time and reducing human effort has become a primary consideration for furniture design, while improving function and shape.

Familiarity with multi-purpose furniture with its three axes (the functional, economic and aesthetic aspect), and employing it in a flexible and modern formulation in educational facilities to raise the standards of the user's utilitarian values, and increase his life span.

- Access to design methods and solutions for multi-purpose furniture in the educational establishment (colleges of art and design), and implement it in the vacuum of the campus, to increase the space efficiency of educational facilities, and maintain social distancing.

Research Hypothesis:

Multi-purpose furniture is used to solve the problem of space and achieve social distancing in light of the spreading epidemic (Covid 11), and it is more flexible and practical than traditional furniture to reach the maximum expansion in the educational establishment, and to face the crisis of crowding that affects human psychology.

- Educational facilities need multi-purpose furniture that adapts to any space, is distinguished in terms of aesthetic appearance and maintains distances and spacing, as it achieves more than one purpose and function, and is more practical and useful, as it is the perfect solution to those problems, and conforms to the user's desires.

- Design methods and applications for multi-purpose furniture in educational facilities, which achieves the greatest useful value, increases its lifespan, facilitates the study process, provides a good workspace, and maintains functionality and safety.

Research Methodology:

The research follows the descriptive analytical method: to analyze and describe "multi-purpose furniture, its characteristics and importance to increase space efficiency in educational facilities", in light of the functional determinants of the nature of the selected part in the educational facility, and through analytical and descriptive studies of some designs

implemented for multi-purpose pieces of furniture, as well as in building procedures "Tools" search from a questionnaire.

It also follows the applied approach: to confirm the hypothesis of the research through applied studies taken from the research results, and to apply what the study will give to multi-purpose furniture in educational facilities, and to apply and create pieces of furniture in any space of the campus (in the faculties of art and design), from the "researcher's design". And making use of it and using it for more than one functional purpose, finding non-traditional solutions and a furnishing design style that is functionally and aesthetically proportionate with small spaces to reach furniture pieces that meet the standards of user-utilitarian values, in light of the Corona crisis and the availability of social distancing, and the implementation of proposed models with a real scale at the Higher Institute of Applied Arts In the fifth assembly, the evaluation of the proposed designs and models, as well as the questionnaire designed by the researcher.

The Research Limitation:

To prove the hypothesis of the research and achieve its objectives, the research is determined in a study:

Teaching and developing the skill of multi-purpose furniture design, its evaluation in (educational origin), and its role in developing the community environment and its various experimental applications, to increase the efficiency of spaces in educational facilities.

Diversity in the production of modern design methods and making designs and models for pieces of multi-purpose furniture in crowded places "educational facilities", as it is linked to the space of spaces, and is a basic category of flexible furniture that improves the use of the facility, the exploitation of space and the preservation of functionality and safety, in light of the Corona crisis.

Applying multi-purpose furniture techniques in educational facilities for the purpose of exploiting the spaces in the courtyard

University to allow students to sit on furniture and use it in various ways that help complete study tasks.

Time limits: addressing the current period (2021 AD), when the need for innovative solutions that fit the space became an important issue in light of the current epidemic crisis spreading "Corona Virus", and with the population growth, which led to the inability of small spaces to accommodate sufficient furniture, so the design is based on Community needs and problem solving, to provide a better and satisfactory environment to motivate users.

Spatial boundaries: It depends on making use of multi-use furniture in an educational facility (Faculties of Art and Design), "The Higher Institute of Applied Arts in the Fifth Settlement", and following the research methods within it.

Conclusion:

From the research and its results and the consensus of the opinions of specialists and scholars about it, it becomes clear "the extent of the importance of multi-purpose furniture and its application in educational facilities because of its design dimensions that work on finding non-traditional solutions, achieving maximum benefit, functional efficiency and comfort for the student in the educational facility, to reach the highest standards of utilitarian values, And take advantage of providing the best multi-purpose piece of furniture in the educational facility, and

it suits the nature of the general performance (durability, simplicity of installation, and economic cost).

- Applied analysis of innovative and implemented models of multi-purpose furniture in educational facilities "The Higher Institute of Applied Arts in Fifth Settlement" presented by the researcher "by computer" with a real scale, to increase design awareness of multi-purpose furniture, and bear a furnishing design style that is functionally and aesthetically proportional to small spaces, And to reach pieces of furniture that have beneficial values for the user, and are used for more than one purpose to exploit the places.

Findings and Recommendations:

First, the search results:

Through the study carried out by the researcher, and the applied project, a number of results were obtained for scholars and specialists in the field of interior design and furniture, which are summarized as follows:

1- Furniture that mediates between the space and the user; It is essential for the completion of the interior design components, as it is in the least space and performs many functional criteria; It has spatial limits because it differs in design from one place to another (the shape and idea), and it has temporal limits, so it evolves and varies with the passage of time, in addition to the events that occur in society such as the Corona epidemic, where its appearance led to the need for furniture to evolve.

2- Multipurpose furniture is one of the most important modern changes in the field of interior design, because it increases the value and effectiveness of furniture pieces, and includes at least two forms of appearance and function, and has a complex, basic and transformative appearance.

3- The multi-purpose furniture design depends on smart ways that make it multi-use, and it is characterized by: It performs more than one function, makes good use of spaces to provide intellectual creativity and achieves social distancing in light of the (Covid 11) epidemic, and provides a more flexible, practical and comfortable environment than traditional furniture for access To maximize the expansion of the facility, face the crisis of overcrowding that affects human psychology, encourage the educational process and cooperation, and give an aesthetic touch to the educational facility, and it fits all spaces. Thus, it will be used for future generations.

4- The importance of educational furniture to complement the educational and intellectual system, as it is designed as part of the service with the space, to confirm the learning process with educational planning, and is designed through the principle of science, art and technology, so science tends to identify furniture standards and functionality for the user, and art tends to the general form and variables Aesthetic, and technology tends to the optimal means of production, taking into account the economic aspect.

5- The multi-purpose furniture achieves a good design system in the educational facilities space, to suit the different requirements, starting with design thinking, production, and participation, and works on finding non-traditional solutions to achieve comfort for users and functional efficiency, and finding a furnishing design style that is functionally and aesthetically appropriate for small spaces To reach the highest standards of utilitarian values for the person who uses the space.

6- As a result of the change witnessed by the concepts of interior design in light of modern technology, and the association of intellectual development with the presence of modern

materials, the creative ability of the designer to produce multi-purpose furniture that affects the space increases.

Second: Recommendations:

Through the research, the applied project and the results, a set of recommendations were reached:

1- Paying attention to multi-purpose furniture with its three axes (functional, economic and aesthetic), and employing it in a flexible and modern formulation in educational facilities to raise the standards of the user's utilitarian values, confirm its importance and benefit from it in exploiting spaces, and reducing costs.

2- Familiarity with the diversity and production of modern design methods for multi-purpose furniture, and taking advantage of the designers' orientation to achieve functional and aesthetic efficiency, find non-traditional solutions and comfort for the user, and in the diversity and formulation of new designs that keep pace with the times and meet the needs of the market in crowded places "educational facilities", so that after technological progress, space saving Time and human effort are a primary consideration for furniture design.

3- The need for innovative solutions to design multi-purpose furniture that achieve maximum benefit, functional efficiency and comfort for the student in the educational facility, and to highlight his role in creating and developing the community environment and its various experimental applications in the vacuum of educational facilities (faculties of arts and engineering), where he lacks a furnishing method that suits him functionally and aesthetically. In light of the Corona crisis and the availability of social distancing, where there are no places to sit and work surfaces available for it related to the field of study and work of students in the courtyard of educational facilities "vacuum of the campus", taking into account the available space for students and their lack of disability, providing sufficient work space and movement for the student, and the extent of its impact. The use of it in facilitating the study process, and how to link it with the field of interior design.

4- There are studies to link modern technology and its application in multi-purpose furniture, because the designer should be familiar with and aware of modern techniques and materials, their characteristics, capabilities and the latest methods of implementation, to change the design ideas as a whole in the design of multi-purpose furniture commensurate with the changes of the times.

5- Coordination between the researcher, students and specialists in the field of interior design and furniture, to determine the students' needs for multi-purpose pieces of furniture in the educational facility, to meet the need and make more efficient use of the space of the educational facility, so the results can benefit the community in providing the best piece of multi-purpose furniture in the educational facility It is characterized by simplicity, ease, and paper design, and it is suitable for all levels of study and departments in universities, and also does not take up much space and can be placed in one place, and can be dismantled, installed and transported easily.

6- Transferring the skills of multi-purpose furniture design to students of colleges of applied arts, Department of Interior Design and Furniture, as it is an opportunity for educational agendas, and is used to develop many basic skills, support knowledge of modern technologies, and pay attention to important topics such as social responsibility.

References:

- 13- AICRP - FRM, PG & Research Center, ANGRAU, Rajendranagar, Hyderabad 500 030, Department of Resource Management and Consumer Sciences, College of Home Science, ANGRAU, Hyderabad 500 004, Andhra Pradesh, India, 2006.
- University of Iowa 14- Chinese bench: a research on multi-function furniture design- design" MFA (Master of Fine Arts) thesis, University of Iowa, 2016.
https://drive.google.com/file/d/1p04C_JX7XzXZhlUHUfeGEENEfTeS3r6c/view?usp=sharing
- 15- Connie Chen , insider , article : multi-functional furniture pieces that'll make your small home feel more spacious, Oct 22, 2018
<https://www.businessinsider.com/multi-functional-space-saving-furniture-2018-2#a-mirror-that-holds-your-jewelry-3>
- 17- Farjami, E, The Role of Contemporary Innovations on Flexible Residential Furniture with Smart and Green Materials. M. thesis, Eastern Mediterranean University (EMU) - Doğu Akdeniz Üniversitesi (DAÜ), (2014).
- 18- May , Yixie professor , Correia , Monica, Chinese Pench :a research on multi - function furniture design 2016 , page 24 .
- 19- Monica Correia, University of Iowa, 2016. , Professor, Chinese pench:a research on multi-function furniture design, b yixie, A thesis submitted in partial fulfillment of the requirements for the Master of Fine Arts degree in Art in the Graduate College, May 2016, page ١٢.
<https://www.google.com/url?sa=t&source=web&rct=j&url=https://ir.uiowa.edu/cgi/viewcontent.cgi?article%3D6571%26context%3Ddetd&ved=2ahUKEwisldbik->
- Web page : home crux ,20- Monika Thakur, Bookniture : Sleek tome folds out into multi purpose furniture . February 16, 2015 <https://www.homecrux.com/bookniture-sleek-tome-folds-m>.
- 21- Özyurt, Elçin , Advisor:Demirkan, Halime, Date :1994, Publisher :Bilkent University.
<http://repository.bilkent.edu.tr/handle/11693/17594>. 1994. 2
المصدر : <http://repository.bilkent.edu.tr/handle/11693/17594>
- 22- Shiyao Wang, Wood Products Industry Science, Ph.D., Forestry University; Sofia, Bulgaria, April 2013. p 2.
<https://www.coursehero.com/file/25416632/Wang-Shiyao-WOOD-493-Project-2013pdf/>
- 23- Smaroula Tachmatzidou , researcher, Master's thesis, in folding furniture at the University of Greece in 2019 and published on the university's website, from page 7 to page 9.
[https://www.google.com/url?sa=t&source=web&rct=j&url=https://repository.iuh.edu.gr/xmlui/bitstream/handle/11544/29610/Dissertation Smaro Tachmatzidou .pdf%3](https://www.google.com/url?sa=t&source=web&rct=j&url=https://repository.iuh.edu.gr/xmlui/bitstream/handle/11544/29610/Dissertation%20Smaro%20Tachmatzidou.pdf%3)
<https://www.coursehero.com/file/25416632/Wang-Shiyao-WOOD-493-Project-2013pdf/>
- 24- YaoMing Chuang , Metro Max_ A Multifunctional storage unit furniture design (1).pdf Rochester Institute of Technology A Thesis Submitted to the Faculty of the College of Imaging Arts and Sciences in Candidacy for the Degree of Master of Fine Arts MetroMax: A Multifunctional Storage Unit Furniture Design , January. 19٩9.