

Design Flexibility as an Approach to Interior Design for Small Spaces: A Case Study of the Halls of the Faculty of Applied Arts, Damietta University

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Abstract:

The use of design flexibility in the interior design of small spaces helps to maintain the continuity of design and achieve the characteristics of permanence and performance. It is one of the most important properties of creative thinking. Design flexibility is the ability to accommodate rapid changes within the interior space, whether in technological or social requirements. It is one of the most important sustainability recommendations for its characteristic of permanence and performance. It allows the user to make the best possible use of the interior space regardless of changes, in an innovative way that meets their needs. The research problem lies in the following questions: How can design flexibility be used to solve the problems of small spaces in interior design, through the study of types and classifications of design flexibility, and its application in designing furniture for the Faculty of Applied Arts that fits small spaces after moving the faculty to a smaller area? Therefore, the research aims to analyze the types and classifications of design flexibility and understand how to apply it in solving the problems of small spaces in interior design, and to apply that through the design of suitable furniture for the Faculty of Applied Arts that matches the small spaces after moving the faculty to a smaller area. The importance of the research lies in the importance of design flexibility in solving the problems of small spaces in interior design, which contributes to improving the use of small spaces efficiently and meeting users' needs. The researchers assume that relying on design flexibility in the interior design of small spaces helps to meet the needs of the user and achieve the basic functions of small spaces, in addition to diversifying the activities that can be practiced within this space. And that the use of design flexibility in designing furniture for drawing halls within the interior design department at the Faculty of Applied Arts contributes to enhancing the needs of students and maintaining the basic functions of the space, which are drawing tables with variable dimensions that fit the small space. To answer the research problem, the researchers collected theoretical studies on design flexibility in the interior design of small spaces and based on them, they designed and implemented 3 pieces of furniture consisting of flexible and detachable drawing tables, which can contribute to solving the problem of small spaces for the halls in the interior design department and furniture at the Faculty of Applied Arts. The research concluded that design flexibility significantly enhances the utilization of small spaces, allowing for better fulfillment of user needs. The study recommends training designers on the principles of design flexibility and its importance in improving the efficiency of small spaces and meeting user requirements.

Research Problem: The research problem revolves around the following questions: How can design flexibility solve small space problems in interior design? By studying the types and classifications of design flexibility and applying them in designing furniture pieces for the Faculty of Applied Arts to fit the smaller spaces after relocating the faculty to a smaller area?"What is design flexibility, and what are its types, forms, and sources? What are the criteria that must be met in the interior space and furniture to make them flexible? How can design flexibility be achieved in

the interior design of small spaces? How can design flexibility for small spaces be applied to the spaces of the Interior Design Department at the new Faculty of Applied Arts after relocation? Can design flexibility be achieved by designing furniture to fit small spaces?

Research Hypotheses: Based on the previous question, the researcher hypothesizes the following: 1. Relying on design flexibility in the interior design of small spaces helps meet user needs and achieve the basic functions of small spaces, in addition to diversifying the activities that can be carried out within these spaces. 2. Using design flexibility in designing furniture pieces for drawing rooms within the Interior Design Department at the Faculty of Applied Arts contributes to meeting students' needs and maintaining the basic functions of the space. These furniture pieces are drawing tables with adjustable dimensions to fit small spaces. 3. Employing design flexibility as an approach to designing furniture with adjustable dimensions (engineering drawing tables) helps solve the problem of small spaces.

Research Objectives: This study aims to: 1. Analyze the types and classifications of design flexibility and understand how to apply them to solve small space problems in interior design. 2. Design suitable furniture pieces for the Faculty of Applied Arts with design flexibility that fits small spaces after the relocation of the faculty to a smaller area. 3. Evaluate the efficiency of the proposed solutions in improving the use of small spaces and enhancing the aesthetic and functional aspects of interior design.

Research Significance: The significance of this research lies in: 1. The importance of design flexibility in solving small space problems in interior design, contributes to the efficient use of small spaces and meets user needs. 2. The potential of design flexibility to improve the aesthetic and functional aspects of small spaces by designing flexible furniture that changes in size, shape, and function to suit user needs. 3. The importance of design flexibility for innovating design solutions for engineering drawing tables that can be dismantled and assembled to overcome the problem of limited spaces after the faculty's relocation.

Research Boundaries: 1. Spatial Boundaries: The study addresses design flexibility in interior design and furniture, focusing on designing flexible furniture for the Faculty of Applied Arts. 2. Temporal Boundaries: The study examines design flexibility in interior design and furniture design at the Faculty of Applied Arts in 2024.

Research Methodology: 1. Descriptive Analytical Method: Describing and analyzing design flexibility, its types, forms, sources, and the standards that can be applied to achieve flexibility in the interior design of small spaces. 2. Practical Method: Designing and implementing several furniture pieces to achieve design flexibility. 3. Critical Method: Critically analyzing the implemented flexible furniture models.

Research Structure: The research structure includes several sections: Design Flexibility as a Concept and Its Application in Small Spaces: A. Concept, history, forms, and types of design flexibility. B. Design flexibility in the interior design of small spaces. C. Standards for achieving flexibility in interior design for small spaces. D. Design flexibility in furniture for small spaces. E. Multi-purpose flexible furniture.

Applied Study: A. Identifying the problem in the case of the interior space of the design and furniture halls after the relocation of the faculty. B. Flexible interior design as an approach to solving the problem of small spaces in the halls. C. Flexible furniture as a proposal to solve the interior design problem of small spaces.

Results: 1. Design flexibility significantly improves the utilization of small spaces, allowing better fulfillment of users' needs. 2. Design flexibility helps achieve higher efficiency of spaces by allowing adjustments to accommodate various activities and changing needs. 3. Using design flexibility enhances the sustainability of interior design, as spaces can adapt to technological and social changes without requiring major alterations. 4. Flexible spaces contribute to greater psychological comfort for users, as they can adjust the spaces to meet their personal and functional needs.

Recommendations: 1. It is recommended to apply the principles of design flexibility in educational spaces, such as drawing rooms at the Faculty of Applied Arts, to meet the changing needs of students related to their specialization and studies. 2. Flexible and easily assembled furniture pieces

should be designed to fit small spaces, making it easier to rearrange the spaces as needed. 3. It is crucial to integrate the work of interior designers and architects to ensure the creation of flexible designs that meet future requirements. 4. Sustainable technologies and materials should be used in the design of spaces and furniture to ensure environmental and economic sustainability. 5. Designers should be trained in the principles of design flexibility and its importance in improving the efficiency of small spaces and meeting user needs.

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