Explaining The Physical Components of Space in Creating an Architectural Learning Environment

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Abstract: *Today, more than ever, the need to provide the field of growth and fertility of the potential talent of architects seems necessary. Creativity is considered as the main feature of a design process and physical environment is one of the factors contributing to the increase of these features. The present study, titled "Explaining the physical components of space in creating an architectural learning environment" aimed at increasing the creativity and innovation of architects, considering the psychology of the environment and the spatial attributes and physical characteristics, seeking to create a stimulating environment for the liberation of thought and the creative expression of architects. Selective strategy of this research is taking advantage of mixed strategies; the method used in this research is descriptive-analytic research method that after studying the literature, the secondary information needed for research was obtained through semi-structured interviews. Then, the results were evaluated through a narrative analysis, and ultimately, the implications of natural element irritation, diversity and flexibility, aesthetic attributes, and personal and group involvement with space (creation of creativity collective environments) were extracted as creative motivator and after scientific investigating, theoretical bases were extracted from the collected information and the effective design qualities are presented to solve the problem.*

Key words: *creativity, physical characteristics, architectural educational spaces*

1. INTRODUCTION

Today, all human successes and advances depend on its fruitful, dynamic and effective thinking, and man's creative thinking is the most complex and finest manifestation of human thought. Creativity has been considered as one of the most important educational factors for the creation of architectural work. Undoubtedly, creativity, creation of new and innovative designs is one of the most important parameters for assessing the success of architects in the field of architectural design. Therefore, having a clear picture of what and the possibility or impossibility of training and developing creativity can be very effective in the future of architecture. One of the ways to develop the creativity is to pay attention to the educational environment. The emergence and prosperity of creativity involves environmental conditions and the result of the interaction between the artist and the environment. With the scientific advances of the 1950s and 1960s, human behavioral approaches to their environment were interpreted such that which were not separable. In fact, individuals are the agents of environmental change, and the environment is a factor in the behavioral change of individuals. This approach says that the human relationship with the environment is a dynamic and constantly changing relationship, and it defines the various levels of human and environmental relations. Theologians and thinkers believe that the quality of architecture can provide the opportunity for imagination and provide the foundation

for the creation of a creative place. As we know, all of the environments and educational spaces should be the appropriate templates for the occurrence of human behavior. Today, the most important disadvantage of the existing education system is that they do not teach their students how to use their capacities, their abilities, their intelligence, and the trained ones are mostly "cultivated" in limited spaces that, in terms of their educational structure and performance, are not in desirable conditions. With the extension of technology and the change in the academic education system and ignoring the psychology of the environment in the educational environment, the architectural community faces numerous problems. The results indicate that most learners do not feel fully satisfied with the educational environment, and because of the lack of a proper and perfect training environment before the creativity, the person enters into the mysterious world of architects and makes him a maverick. Today, the consequences of these disorders can be seen on the walls and the alleyways of Iran's cities. If we look at the architecture of the past three decades, we will see that the works produced will not exceed the counting of fingers, and in other works, there is no effect of the presence of affective thoughts and innovative ideas. Thus, there is a need for an architectural environment with creative components and stimuli and in this regard, paying attention to the subject of environmental psychology in design is very necessary. When a complex contains all of the psychological characteristics so it creates a vibrant and dynamic environment. The purpose of this study is to identify the physical factors and spatial attributes affecting the emergence and development of creativity and achieving achieve architectural solutions for the design of a place that can improve the quality of Iranian architecture in order to foster creativity of architects and create creative architecture and heals the uneasy condition of today's architecture. And seeks to answer the question of how an architect can design a place that its physical factors help hold creativity and create creative designs? This question arises from the basic assumption that the promotion of the creativity of an architect is the result of his interaction with the physical environment, and in this context, ideas and thoughts flow on the mind and the heart of the artist and he/she with full energy begins to create something. In order to reach this answer, first principles found in the field of environmental psychology have been studied and interviewed based on the needs of creativity, and ultimately the stimuli are presented in the form of scientific results; that we will refer to them later.

Concepts, views and theoretical principals

Creativity and factors affecting it

In general, there are a lot of definitions for creativity. One of the most accepted definitions is presented by Amabile, who states: "Creativity is the production of novel and useful ideas in any domain" [1]. Creativity is the key word in explaining the design process and creative training in all areas of design. Recognizing and defining the term "creativity" can lead to a better understanding of it and achieving a more successful process in the design process of architecture. Creativity is one of the main areas of research related to artistic phenomena. Undoubtedly, every transformation that takes place in contemporary art always places the issue of creativity and psychological motivation at the center of its discussion. It can be said that art is essentially the same as creativity, and it has a profound educational performance and impact that, on average, gives a new insight to the person and reconsiders its relationship with humans and other things and forces it to research and find new ways to analyze new solutions. Moreover, the advent of artistic creativity, such as creativity in other fields of science and education, requires the assistance and interference of some subjective and environmental factors [2]. High creativity and actionable minds have a special place in the process of creating artwork. Therefore, each artist proportional to his/her artistic personality traits, believe that its stimulation and fertility is so important, investigating the components of creativity makes it clear that creativity is not a personality trait that in the absence of any change lies in human existence, but is one that is fully influenced by factors or barriers that weaken or destroy the amplification. Some conditions provide the grounds for the emergence and expansion of creativity, while some situations destroy the creativity in human existence. In a general classification, the factors influencing creativity can be divided into two general categories: individual (internal) and environmental (external). Individual or internal factors are those factors that come from individual and personality traits, and environmental or external factors relate to situations that a person is

exposed to in relation to others or the environment [3]. The most important factor in generating creative actions is the environmental factor. From the perspective of behavioral-oriented psychologists, creative activity and behavior can be searched and analyzed in a chain of stimuli and responses. Creativity is a behavior that is learned from the environment and is influenced by environmental conditions. The creative environment stimulates people and those who are ready to receive these stimuli, address the creative responses. Creativity is a general talent in humans-like intelligence and memory- and everyone is more or less creative. This natural tendency appears low or high in terms of environment and other conditions. There are beneficial environments for creativity that boost, expand and grow it. Creativity is creativity that leads to the creation of a new element. Mahdavi Nejad's studies have shown that many strategies have been proposed to develop students' creativity. In this study, the environmental factor is considered as the most important factor in the formation of creative ideas. In this approach, the environment, conditions and space for the creation of an artwork are considered. The enthusiasts of this attitude believe that the environment is considered as the most important factor in the formation of creative ideas in the individual and without a suitable environment, the practical formation of creative ideas and their promotion is not effectively possible [4]. For this reason, in this study the "environment" factor has been considered as an effective factor in the process of creativity.

Basic Concepts of the Environment and Human Behavior

The term "environment" has various meanings that makes it difficult to achieve a single definition of it. The Oxford dictionary defines environment as the scope or context that any phenomenon or inventory are lived or present in it. The environment is referred to everything around it and is potentially associated with the individual. In the psychology of the environment, they consider the environment of human life as one of their own behaviors and activities, and they refer to it as a physical setting. In this view, the basic assumption is that human behavior and experiences cannot be considered separately regardless of environmental conditions. The environment includes a set of behavioral settings that are interconnected and share cases. These behavioral settings have two basic elements, a behavioral indicator pattern and a physical environment. The physical environment is a physical structure, composed of related surfaces and consisting of specific patterns that forms open and close buildings, rooms and space layout [5]. In fact, the experience of each individual in life and the skills he learns is related to the environmental conditions and product of the interaction between the person and the environment in which he lives. The environment by creating opportunities and stimulating and encouraging human behavior affects its behavior. The environment in which people make their plans and activities has two-way relationships. People affect the environment and environment affects people. In this regard, the perception of the environment influences how activities are shaped in space [6]. The environment has the potential to provide human experiences and behaviors. The basic processes of human interaction and the environment are shown in the following figure.
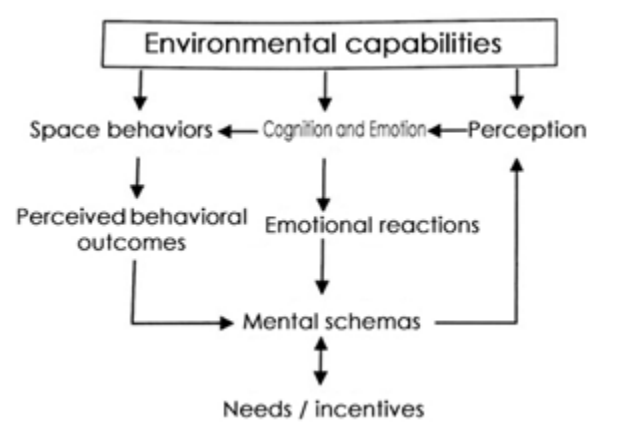

Figure: the environment capabilities [5]

Concerning the reception and experience of space, Counter believes that if the reception and experience of a place can be decomposed into recognizable components, reception and experiences, it is itself a unit of reference for understanding the behavior. Although perceptions have been considered from a variety of points of view, and there is no way to discuss this, the commonly accepted approach in this regard is how the senses respond to the environment and place they are in. This implies the exchange of interactions between individuals and their environment [6].

Educational spaces and the importance of environmental psychology

Educational space is one of the areas of environmental architecture that plays a major role in a community. The role of education in the development of education is undeniable. An educational space is a very significant subject in design, since it belongs to many people and people with different social roles. Social behavior does not occur in the vacuum; therefore, various ways of social behavior are related to the physical environment. Social interactions in the context of the natural – artificial environment and, on the other hand, the reflection of this behavior returns to the physical world [7]. The learning environment is a cultural, social, and physical environment in which learning takes place. Understanding how an effective learning environment works is essential to designing an architectural environment. Washburn, one of the pioneers and thinkers in the field of training and learning, believes that in order to understand how a learning environment works correctly, we must inevitably recognize the factors that influence the learning process. He has expressed these factors in the following diagram.
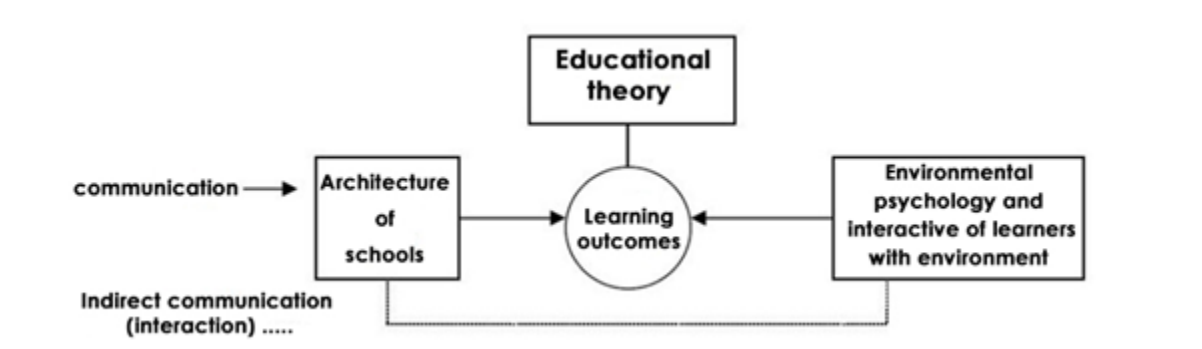

Figure: The Conceptual Framework of Educational Environment Architecture [8]

Therefore, the architecture of educational environments as an agent and perhaps the most important factor in the learning process is efficient and should interact with the physical environment and the peripheral environment, and only if there is a deep interaction with experience in the environment that the educational requirements will be addressed introducing these thoughts and ideas about the architecture of the educational space, we conclude that the architecture of these spaces can be a learning motive or a silent killer of learning [8]. Learning is the central part of every person's life. Even when we do not think about it, it also happens; with the notion that behavior does not occur in vacuum; therefore, different ways of behavior are related to the physical environment. The learning environment will consist of components and elements that will be mutually meaningful. The characteristics and qualities of each of these elements are effective in the formation of different behaviors [9].

The role of the physical environment on creativity development in educational spaces

One of the most important factors influencing the creative behavior after the internal and external factors is the environment and environmental factors. Ernest Ville believes that one of the most important ways of crystallizing the creativity is creating a stimulating, numerous and generally creative environment. He believes that the creation of the creative environment is the most important factor for the supply of new and exciting ideas. Research has shown that changes in physical space are a basic underlying basis for behavioral changes

in these spaces, and if these changes are shaped to form and improve the creativity, they will be able to improve the creative behaviors [10]. Woodman considers the physical environment as an underlying effect [11]. Martens believes that the physical environment of work can be effective in the work and process of creativity and motivation [12]. If we want to provide the layout of an innovative educational environment, it should be said that the physical environment is placed on the highest level that serves as a container for all the inward-looking behavior. At a lower level than the physical environment, there is an organizational and administrative structure that supervises the educational environment, and they affect the social factors of the environment as an active environment for creativity [13]. The relationship between the work environment and physical space is a very important issue as a means of fostering creativity and investigating parts in the physical environment that can affect the work environment and enhancing individual creativity as well as collaboration among creative groups. Research has shown that changes in physical space are a basic underlying basis for behavioral changes in these spaces, and if these changes are shaped to form and improve the creativity, they will be able to improve the creative behaviors in both dimensions [10]. But despite the importance of these things in organizing physical environments, this question always arises that how the physical environment can increase our creativity and how can help us to establish communication? These are issues that not only affect our educational environment, but also our work space in the future. Because creativity and its components will become the most important and most relevant in the future world [13]. Various researches on the impact of physical environment on creativity show that each of the environmental factors independently contributes to the growth of creativity. One of the most important things at the beginning of designing creative environments is to focus on its various aspects. Most of researches are done on wider levels of work environment such as creativity management and the social environment of work, organization's politics and culture, but at this stage, the focus on the physical dimensions of the environment is very important. Physical components can be defined as a group of tangible and visible objects in space that have two functions; in the first dimension, the physical space requirement are considered for the realization of its functions, and in the second dimension, there should be a design approach in the direction of creativity [13].

Research Methodology

In this research, according to the interdisciplinary approach, the environmental psychology was found proper to explain the research question and analyze its dimensions. Selective strategy of this research is taking advantage of mixed strategies; the method used in this research is descriptive-analytic research method. In this study, a literature review of related issues was mainly carried out through the library, referring to valid scientific findings and the basic information of the research framework through in-depth interviews. The community interviewed in this study was made up of professors, graduate students, and architectural engineers, and consisted of 40 community architects who were randomly selected and asked to give their views and conceptualizations about physical features of an architectural educational space to grow the creativity of architects and create innovative designs. Finally, the results of the interview were evaluated through narrative analysis and after reviewing the obtained factors, architectural solutions were developed to create a creative environment for problem solving.

Findings and discussion

Since the statistical community are from different age groups and graduated from different universities, views and opinions have been different in scope and variety. Therefore, scattered views and perspectives were categorized in the form of sentences, and several examples of these propositions were presented in Table (1). The statements obtained were analyzed several times and the obtained information was encoded so that a conclusion could be achieved. After reviewing all of these propositions for each proposition, the title was chosen so that it is representative of the proposition, and eventually brought the titles to the concepts referred to in Table (2). The results obtained from the interview to validate it were examined scientifically through the attitudes of the theorists, and architectural solutions were introduced to them, which are discussed below.

(Table 1) Items of interviews with architects (Source: authors)

percent	Propositions
85%	The bonding of elements inside and outside with natural elements so that the sense of natural space inside the human is lost.
76%	The use of natural elements (plants, water, light and etc.) and the creation of spatial desirability.
59%	Some space in such a way that their students can manipulate it and create a different perspective.
53%	Possibility of viewing around and connecting to the surrounding environment and visibility.
32%	Space in such a way that they create a sense of space.
35%	Atelier and communication spaces in a way that enhances their communication and social interaction.
43%	The use of contrast for natural and artificial light in space
16%	Using appropriate colors and textures using a factor of Environmental Psychology

Statements obtained were analyzed several times and data were encoded so that a conclusion can be reached by. After reviewing all the statements, for statements that define and identify the same factors, a title was chosen eventually leading to the concepts of the categories mentioned in (Table 2).

(Table 2) The findings of the Environmental Triggers contributing to the enhancement of creativity (Source: authors)

The dependent variable	Independent variable		
Creativity	The stimulus studied by creativity	Triggers findings on effective promotion of creativity	
		Stimulating natural elements	
		Diversity and Flexibility	
		The role of aesthetic characteristics	Color
			Light
			Aesthetics of Unusual Spaces
	Environmental factors	Personal or group conflict with space (social interactions)	

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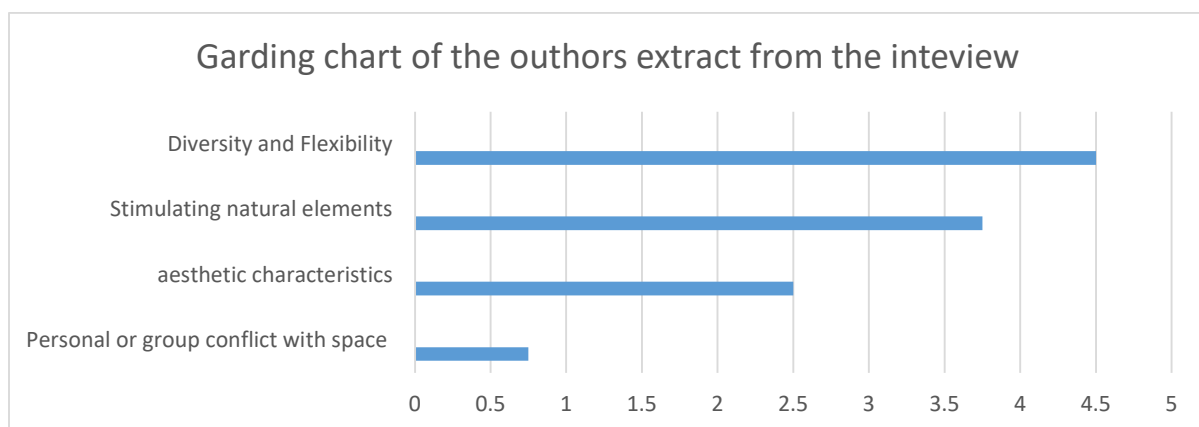
Diversity and spatial flexibility

Based on the results of the interview, according to the architects the "Spatial diversity and flexibility" factor can be more effective than other factors in developing creativity of architects in a unique architectural environment. Flexibility in the word means the suitability of coordinating with each situation and each environment [14] and generally refers to the ability to change objects and objects [15] and in architecture and design, and in particular in the design of educational spaces the flexibility means, the organization of human space and the change in it to meet the conditions, needs and new data. All psychologists agree that motivation is the factor that stimulates the behavior of a person and leads to a certain direction [16]. Among these, many internal and external factors are effective in motivating or discouraging. But it should be noted that exogenous motivation comes from environmental incentives and environmental implications, therefore the environment as one of the motivating factors must be responsive to differences in individuals and their different needs. One of the biggest components in terms of creativity is the focus on user-centered environments and the ability to change the environment by the user according to their desire [13]. An environment that encourages the user to move and discover space and inspires his curiosity can be effective in improving creativity [17]. Therefore, a flexible environment should be easily modified and provide different positions to be responsive and suitable for individuals and their changing needs [18]. With the diversity of space in learning environments, learners compare and understand similarities and differences, and in contrast to uniformity, there is an information that weakens mental and intellectual powers [19]. The flexibility of the environment causes its dynamism and is responsible for positive affection, despite the need for different experiences in different people. This means that the environment must have sufficient adaptability and ability to change its components against the inevitability of change, so that it can survive. In this perspective, the physical environment of the educational environment is not only a dry and unhealthy environment that does not affect the learning process, but as a living factor in the quality of educational activities, is a response to the needs of flexibility in humans. Educational spaces need to respond to many learners and their mood and place them all within a wide range of educational settings. In this sense, spatial diversity helps everyone find a work environment that is appropriate to the morale of introverted or outspoken in accordance with their modes, and through small foreign stimuli, this can provide the best of space for which they feel friendship and intimacy [20]. The spatial diversity and flexibility of the spaces increase the incentive of the researcher to be present in that space. It is clear that if a variety of spaces are designed and there is a particular atmosphere in each corner and a span through space design, it can cover more diverse tastes [21].

Stimulating natural elements

The impact of nature on creativity is undeniable, so that one can trace its footprint to creative research [22]. It can be said that all creative people will consider the life in nature as an effective inspirational factor (same, 402). Since creative people are sensitive to sensory experiences, multiple sensory stimuli in natural elements lead to creative behavior, and in terms of nature, leads to gathering information and becoming more sensitive and environmentally conscious. The environment and its mysterious nature are filled with spaces that force people to think at any moment. Therefore, the combination of architecture with nature enables man to use natural space as a platform for activating thought. Creating the landscape of the natural environment is effective in the growth of creativity. Even the existence of plants in the interior space influences creativity. Exposure to nature is an important part of the process of helping mental health, and it clearly helps mental clarity, self-awareness, self-confidence and independence of individuals. Exposure to nature is an important part of the process of helping mental health, and it clearly helps mental, self-awareness, self-confidence and independence of individuals.

The proximity to nature reduces stress and increases efficiency. Focusing on nature is one of the most important needs of the educational environment in the urban environment. Its presence increases the emotional relationships among humans.

The results indicate that learners prefer to interact with the environment and have permission to interfere with it. On the other hand, visual communication with the natural environment is one of the most essential

elements in the design of educational spaces. The natural environment plays a very unexpected and effective role in the development of mental clarity [23]. The results indicate that learners prefer to interact with the environment and have permission to interfere with it. On the other hand, visual communication with the natural environment is one of the most essential elements in the design of educational spaces [24]. The natural environment plays a very unexpected and effective role in the development of mental clarity.

Aesthetic attributes

Color

Perhaps one of the most prominent ways of attracting learners and enhancing their learning and stimulating their creativity is the use of color, material and texture. By stimulating all senses, diversity of learning is stimulated and learning becomes widespread. It is a fact that color has a great impact on the body, mind, and morale of the people. The proper color for classrooms can reduce anxiety, awe, and promote a sense of well-being. According to Loid, the colors with loud sound foster big ideas in mind. In a survey conducted by the International Telecommunication Research Group on behalf of the Canadian Xerox Company, 80% of the participants acknowledged that color in the environment increases their creativity and develops new ideas in them. Performed a study among learners and concluded that colors affects the mood of students [25]. The color factor is effective as a factor for lightness and enjoying the understanding of the interior space, and the lack of color is considered as a negative aspect of the environment. Studies have shown that individuals with an exposure of more than three hours in a colorful room have higher arousal, more relaxation, and higher levels of emotional ability [26].

The light

Natural Lighting is one of the important factors in designing optimal quality educational spaces and has a significant impact on the conscious and unconscious memory of individuals. Also, daylight due to ultraviolet rays is one of the factors that create the natural rhythm in the biological systems of the body. Studies have shown that students and scholars will have a better performance in a natural-light environment. The use of daylight in space will be more related to nature and will reduce the anxiety of learners. Modern traditional architects focus more on aesthetics aspects and focus on the visibility, landscape, and clarity of space, but in educational settings, it is better that these dimensions tend to be more inclined toward mental stimuli [26].

Aesthetics of Unusual Spaces

Beautiful, engaging and unusual buildings are a great place to stimulate creativity. Of course, in the design process, this does not mean creating a vibrant building. The need for spatial variation in the totality of space is irrelevant, and only unusual and new spaces on small and in terms of learners with spatial change and spatial transformation over a short period of experience will also be able to be a very important factor to raise the curiosity and creativity [27]. Favorable environments should combine readability, mystery, and shelter for activities. Readability is defined as an understanding of space, and mystery is additional information that you can access them if you are exploring it [28]. There is a strong connection between the aesthetics of space perception and emotional reactions, and with low satisfaction of the quality of the environment, it quickly manifests dissatisfaction among individuals or physical encounters caused by environmental stress [13].

Personal or group interventions with space (social interactions)

Collective environments provide an opportunity to escape from tensions, social interactions, and the gathering of individuals and groups and the context for their presence, freedom of expression and their means in space. Interaction is one of the creativity factors that greatly affect the physical spaces. The potential capabilities of an environment make it possible that unpredictable activities take place on it, and due to their new nature, these activities are creative activities that creating them in a collective atmosphere causes creativity. The extent and type of group communication has a positive impact on the process of creativity [29]. The studies admit that

creativity of people in collaboration with each other flourishes due to the interaction of ideas [30]. Releasing capacities and capabilities in an environment and in a collective atmosphere affects society and enhances the creativity of individuals and ultimately enables them to achieve a creative plan. According to the studies, the spatial characteristics of natural elements irritation, variety and flexibility, aesthetic attributes, and personal and collective engagement with space (Creation of Creativity Environments) can provide the necessary ground to increase creativity and to present a plan and can be used to facilitate the creation of creative designs. Accordingly, in this research after scientific researches, physical suggestions have been presented to solve the problem, which are presented in the following tables:

(Table 3) Physical Solutions to Diversity and Flexibility Components (Source: authors)

Solutions	Creativity stimuli				
	Flexibility Factors			Ability to respond to changing conditions	Flexibility of the environment
- Multi-functional spaces					
- Live the path of communication and transport space by converting the narrow corridor to the area to learn					
- Creation of active and passive activities in the entire collection by creating customizable community boundaries for multipurpose use	Variability (expandability)	Versatility (irritability)	Variability (convertibility)		
- Transparency and the possibility of being present in all the moving activities in the entire collection, albeit visually					
- The connection between the inside and the outside by extending the range of learning from closed spaces to open and open spaces such as terraces					
- Allocate a lot of space to classes for multiple activities.					
- Use flexible and non-fixed furniture.					
- Ability to reduce or increase space according to the needs of individuals					

(Table 4) Physical solutions of the element of stimulating natural elements (Source: authors)

Solutions	Creativity stimuli					
	Flexibility Factors				The ability to increase the sense of	Stimulating natural elements
- Enlightening and respecting the surrounding environment due to reflection in the water						
-link separate elements in the architecture by the streams of water						
-Creating waterfalls as part of the architecture for the closer contact of humans with the environment	water	wind	plants	sun		
-Defying disturbing sound due to the presence of water in the environment						
-Injecting water into the environment and creating a sense of relaxation, dynamism and boiling						
-Creating a central atrium in the building and moving and the presence of plants in the interior to reduce the stress and tension in the environment						

-Exposure to nature through the creation of open, semi-open and integrated spaces with nature.					
-Creating large windows and visual communication with nature					
-to create a sense of presence in a safe place by the natural landscape					

(Table 5) Physical solutions of the element of stimulating natural elements (Source: authors)

Solutions		Creativity stimuli			
Use of yellow, orange, pale beige, bright green and blue in classes and - .educational materials to *stimulate* creativity		**Flexibility Factors**		Beautiful, pleasant and unusual buildings are an effective space for	Aesthetics
Use of the window on all levels, the use of reflections of light from uprights, the entrance of light from the surrounding surfaces and objects, the conscious layout of the devices, the light and the level of the surface	Uniform light distribution in space				
control glare and reflection through the - curtains, shutters and materials and prevent its negative effects on learners	Avoid reflections and light shine as much as possible	Aesthetics of Unusual Spaces	Light and natural illuminating	color	
Pay attention to the amount of natural - light entering the day at different times	Correct location of spaces with different applications for optimal use of natural light				
The use of dynamic and static spaces that can persuade the universe to - .explore					
Create preferred environments using a combination of readability and - mystery					
Create spatial attractiveness with the greatest attention to the - environment and create a landscape					
an increase curiosity by creating complexity in the building -					
Using the curve form as one of the most important factors in creating - mental relaxation and creativity					

(Table 6) The physical solutions of the component of personal and group conflict with space (Source: authors)

Solutions		Creativity stimuli			
-Blending people together with space		Flexibility Factors		Collective environments are an	personal or
-Creating diversity in the form and location of the variety of activities in different parts					
-Flexibility and possibility of multi-functionality of spaces and availability		Pri	Soc ial		

-Creates a space for strolling and pausing in a beautiful and pleasing environment with the ability to go out and out				
-Design spaces and the length of pause at the intersection of Routes				
-Create visibility and proper perspective and the ability to roam along the way and watch				
-Design corridors with adequate width and corners for stops and occasional or preset visits				
-Possibility to sit with the appropriate orientation and vision				
-Use stairs and short walls along the path				
-create intimate spaces for dialogue				

Conclusion:

According to the results derived from past studies and the present study, we conclude that spaces are capable of being as physical stimuli within the structure of the environment as one of the factors contributing to the formation and promotion of creativity and can be organized proportional to mind and the perceptual structure of the learners and their definitive understanding of creativity and cause individual abilities, including increasing imagination and visualization, increasing the ability to understand and solve problems, and increasing the fluidity of the mind. Accordingly, in this research, the creativity components were investigated according to the needs of the audience so that the interaction of the human psyche with the environment and the environment with human would be established and thus provide a suitable environment for creativity. From the data obtained, many creativity stimuli have emerged, in particular in this study the implications of natural elements irritation, diversity and flexibility, aesthetic attributes, and personal and group involvement with space (creation of creativity collective environments) were examined as selected stimuli and architectural solutions were presented after conclusion. Therefore, it is suggested that in future researches, other factors of creativity spatial attributes should be explored in order to develop new ideas for a new and comprehensive plan.

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