

PalArch's Journal of Archaeology of Egypt / Egyptology

INVESTIGATING THE EDUCATIONAL SPACES OF THE UNIVERSITY OF ARCHITECTURE AND PRESENTING A STRATEGIC THEORY TO CREATE AN EDUCATIONAL ENVIRONMENT BASED ON THE PRODUCTION OF APPLICATION THEORY (CASE STUDY OF SHIRAZ UNIVERSITISE OF ARCHITECTURE)

Maryam Dastgheib Parsa, Vahid Shali Amini, Vida Norouz Borazjani*

Department of Architecture, Central Tehran Branch, Islamic Azad University, Tehran, Iran.

Maryam Dastgheib Parsa, Vahid Shali Amini, Vida Norouz Borazjani: Investigating the educational spaces of the University of Architecture and presenting a strategic theory to create an educational environment based on the production of application theory (Case study of Shiraz universities of architecture) -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(9). ISSN 1567-214x

Keywords: Architecture education, event-oriented education, constructivist education, university education environment

ABSTRACT

This research seeks to apply the theory of constructivism to provide a theoretical strategy to create an event-oriented architecture education environment. Qualitative research with applied consequences is a descriptive-survey goal in terms of cross-sectional time and inferential logic. First, the characteristics of constructive and event-oriented educational environments are extracted from the theoretical foundations and global experiences of creating such environments are examined. After that, the third and fourth semester students of Shiraz universities have been selected as a sample and the pathology of their educational environments has been studied with the tools of observation and questionnaire. After identifying and prioritizing the existing challenges, solutions to create event-oriented learning environments are presented. The results indicate that the lack of relationship between the educational environment and the work environment is the most important factor in the inefficiency of the environment. Cooperation with libraries, museums, construction workshops and urban spaces, equipping spaces for simultaneous use of city or province universities, holding exhibitions and collective and extra-university judging can be effective in increasing efficiency.

INTRODUCTION

In recent decades, the role of learning environments in education has been the subject of extensive studies. Today, the effect of education has been proven by engaging in interactions, gaining experience, and holding events. Constructivist education is one of the approaches that is based on building knowledge through experience and events. Information and communication developments in today's world have fundamentally changed the educational structure and market needs. On the other hand, event-oriented and

constructivist trainings need appropriate training environments to be implemented. What is clear is that Iran's university education environments have remained inherently stable from the beginning until now and have not been able to adapt to the conditions of the present world, which has shown the need to address the issue as much as possible.

According to Fraser's findings, students' learning is influenced by several factors, among which, the classroom environment is the most important determining factor (Fraser, 2015) and one of the intervention methods for better learning has always been changing the learning environment (Ramzden, 1988). Educational environments in Iran can not be considered as educational assistants. Elimination of this shortcoming will be possible by recognizing the criteria of architectural design and its impact on education. Considering the topics and teaching methods in the future, the role of educational space will be much more serious than the current ideas. The educational space provides the grounds for the optimal implementation of educational programs by supporting and providing the context, so this body itself must be informative, thoughtful and creative (Zarghami et al., 2011). In addition, the role of physical components in the architecture education environment is more important than other disciplines. As Heidari et al. (2013) in their study have shown that architecture students know the role of physical parameters in shaping the meaning of the faculty more than mental and educational parameters. In their research, Gomez and Vojan (2017) also considered the factors affecting learning, including gaining experience, interaction with the environment, and the risk-taking of conversation.

In recent decades, the constructivist view based on the theories of Vygotsky and Piaget has been proposed as the dominant theory in learning (Ni and Lou, 2010) and educators have designed learning environments based on the principles of constructivism (Aldridge, Dorman and Fraser). , 2004). This perspective emphasizes how learners create meaning and considers the process of knowledge building to require active learner involvement (Santrak, 2012).

The use of constructivism indicators can improve the standards and quality of architecture education both traditionally and virtually (Kurt, 2011). On the other hand, architectural design studios are one of the most suitable environments for implementing constructive teaching methods. Are considered oriented (Ceylan et al., 2010).

The present study, with the aim of achieving strategies to create event-oriented spaces that enable constructivist architecture education, seeks to answer the questions that which of the criteria of constructivism in the Iranian university education environment needs more attention and attention? In order for architectural education spaces to be able to be the context of event-oriented and constructivist education, what features should be included and what strategies can be used to enable the student to build knowledge in the current situation?

RESEARCH BACKGROUND

Previous research-related studies can be classified into two general categories: structural education principles and architectural education environments. Muharram Aghazadeh (2012) in a book entitled "Educational Technology: Based on the approach of constructivism" has studied theories

of learning and educational design in various fields. Hashem Fardanesh (2015) in his book "Educational Design: Fundamentals, Approaches and Applications", has represented knowledge in the constructivist approach and its implications for educational design and has categorized constructive educational design patterns according to learning and teaching approaches.

Regarding educational environments, Andrew Harrison and Les Houghton (2013) in his book "Design to change the educational landscape: space, place and future of learning", states that social, political, economic and technological changes in learning environments lead to the development of theories. Inclusive learning and acceptance has become important as a social nucleus. This book tries to consider all the elements that lead to the efficiency of real and virtual spaces, and finally opens the way to an integrated learning perspective by encouraging stakeholders to create event-based identities. Joss Boys (2010) in his book *Towards Creative Learning Spaces: Rethinking Architecture After Compulsory Education* offers new methods for examining the relationship between learning and the spaces in which learning takes place. It also introduces alternative conceptual frameworks to strengthen social practices and enhance the architectural space of universities and colleges, with the help of educational theories and theory of contemporary architecture. Hamed Kamelnia (2009), in a book entitled "Grammar for Designing Learning Environments: Concepts and Experiences in Design", deals with the sociological aspects of schools, universities and colleges, as well as the design of buildings and their facilities. Kamelnia (2015), in his book "Basic Concepts in University Architecture", considers the design of the university to be strongly involved in social, political, and cultural concepts and considers the appearance of the university as a symbol of the ruling society and the future orientation of society. Taghipour et al(2015), studied Risk analysis in the management of urban construction projects from the perspective of the employer and the contractor. Rezvani Befrouei & Taghipour (2015), discussed Identification and Management of Risks in Construction Projects. Taghipour et al.(2015), studied Construction projects risk management by risk allocation approach using PMBOK standard. Taghipour et al(2020), studied Evaluating CCPM method versus CPM in multiple petrochemical projects. Seddigh Marvasti MA et al(2015), studied Assessing the Effect of FRP System on Compressive and Shear Bending Strength of Concrete Elements. Jalili et al(2015), studied Utopia is considered to be the physical form of an ideal human society where the goals are met. Rezvani Befrouie A et al(2015), discussed the design of high-rise building with ecological approach in Iran (Alborz Province). Taghipour et al(2015), Seismic Analysis (Non-Linear Static Analysis (Pushover) and Nonlinear Dynamic) on Cable-Stayed Bridge. Taghipour et al(2018), studied the Study of the Application of Risk Management in the operation and Maintenance of Power Plant Projects. Taghipour et al(2020), studied Assessment and Analysis of Risk Associated with the Implementation of Enterprise Resource Planning (ERP) Project Using FMEA Technique. Taghipour et al(2015), studied Necessity Analysis and Optimization of Implementing Projects with The Integration Approach of Risk Management and Value Engineering.. Taghipour et al(2015), studied Evaluation of Tourist Attractions in Borujerd County with Emphasis on Development of New Markets by Using Topsis Model. Abdollahzadeh & Taghipour (2015), studied Identify and Priorize

Suitable Area for Ecotourism Development using Multi-criteria Analysis for Development of the Tourism Market in Iran (Nathanz City). Mirzaie et al(2015), studied The Relationship Between Social Bearing Capacities with Conflict as a Result, in the Perception of the Visiting Historical Sites. Taghipour et al(2015), studied Analysing the Effects of Physical Conditions of the Workplace on Employees Productivity. Taghipour et al(2020), studied Application of Cloud Computing in System Management in Order to Control the Process. . Taghipour et al(2015), studied Risk assessment and analysis of the state DAM construction projects using FMEA technique. Khodakhah Jeedi et al(2016), studied The Analysis of Effect Colour Psychology on Environmental Graphic in Children Ward at Medical Centers. Ashrafi and Kamelnia (2016) in an article entitled "Teacher participation in the design of an educational complex" concluded that high quality outdoor spaces, spaces for more student interaction and spaces that allow more experimental and experimental projects are more suitable places. They are for learning.

The results of previous researches in general indicate that educational environments based on the principles of constructivism have increased the effectiveness of people's learning (Barzegar Befrouei et al., 2013; Barzegar Befrouei et al., 2015; Knicks et al., 2005; , 2008; Ahmed et al., 2015; Quan and Wong, 2015). There is a gap in studies that address the characteristics of event-oriented architectural training spaces that offer free and flexible programs and constructive training. Therefore, this article seeks to provide multilateral strategies in this field.

RESEARCH METHOD

The method of this research is based on applied outcome, on the basis of descriptive-survey goal, in terms of cross-sectional time and in terms of inferential logic. This research can also be included in the survey research field. The stages of the research are as follows: At first, the indicators of constructive and event-oriented education and its appropriate environments have been extracted with the help of theoretical foundations and then the world-wide experiences of creating event-based learning environments have been studied. Since then, the current situation of architecture education in Iran and the challenges ahead have been recognized. The method of collecting information is both documentary-library, using existing information and field documents with observation tools and questionnaires. The answers to the questionnaire were designed as a spectrum with a Likert scale of five answers from very low to very high, which were assigned a coefficient of 1 to 5 for quantification, respectively. The type of questionnaire in terms of implementation is "electronic questionnaire". The reliability of the questionnaire was measured by Cronbach's alpha method and the obtained coefficient was 0.81. Content validity was assessed by 20 experts on the three criteria of relevance or specificity, simplicity and fluency, and clarity or transparency based on a 4-part Likert scale. The content validity ratio (CVR) was 0.64 and the content validity index (CVI) was 0.85.

The target population is "Master of Architecture Students" and the available population is "Master of Architecture Students of Shiraz Universities and Higher Education Institutions". Since the second year students studying in the third and fourth semesters have understood the educational spaces of the university more in terms of time, so finally the

"third and fourth semester students, discontinuous master's degree of Shiraz universities and higher education institutions" as the statistical population of this The study has been selected. Considering that the students in question entered the university with the national entrance examination in 2018, according to the selection booklet of the national and free entrance examination of that year, a total of 7 universities in Shiraz accepted students in the discontinuous master's degree in architectural engineering. The breakdown is given in Table 1. According to the field research, almost the entire capacity of the booklet in the studied universities has been filled. Therefore, the sum of this number constitutes the sample size of the research case.

Table 1 - Capacity of Architecture of Shiraz Universities and Higher Education Institutions in Discontinuous Master's Degree

(Source: Author taken from the field selection booklet and field research)

Hafez Institute	Eram Institute	Apadana Institute	Islamic Azad	Shiraz University Autonom	National Shiraz	University	Year
20	20	20	*30	6	18	Booklet capacity	2018
114						Total	

* Due to the lack of this capacity in the booklet has been asked directly from university officials.

The statistical population is 114 people. The sample size was determined using Morgan ready table and 90 people who were given a questionnaire randomly and the obtained answers were analyzed using SPSS software. It should be noted that in addition to the questionnaire, "non-participatory" observation tools were used for the research. The collected data were analyzed using descriptive-analytical method. After extracting the codes and prioritizing the challenges in each stage and applying the experiences in this field, solutions for constructive architectural learning environments have been presented.

THEORETICAL FOUNDATIONS

Principles of constructive education

The design of educational systems has been based on a systems approach from the beginning as a subset of educational technology topics. In the early 1990s, with the advent of the constructivist approach, some experts questioned the use of a systemic approach in educational design. Constructivists believe that the structure of knowledge is not something that exists outside the student's mind, but the structure of knowledge is the result of continuous interaction with the existing structure, testing and refining its mental representations to find a more accurate understanding of the outside world. The focus should be on the learning process, not the learning process (Duffy and Janassen, 1991: 7-12). In the constructivist view, no education is complete unless the student becomes a self-taught student, one who studies,

thinks, and analyzes himself. The principles of constructivist education are summarized in Figure 1.

Include learning in relevant and real areas	Principles of constructivist education
Incorporate learning into social experiences	
Encourage acquisition and comment on the learning process	
Encourage acquisition and comment on the learning process	
Encourage self-awareness of the process of knowledge building	
Provide experience and appreciation from different perspectives	
Encourage the use of a variety of presentation methods	

Figure 1- Introduction to the principles of constructivist education (Author taken from Duffy and Cunningham, 1996)

The roots of constructivist theories can be traced to the teachings of Socrates and later to Immanuel Kant. Among the thinkers who have new ideas about constructive education with an emphasis on experience and events are Jacques Rousseau, Maria Montessori, Johann Heinrich Pestalozzi, Friedrich Frobel, John Dewey, Jean Piaget, et al. Dadman, Eisner, Patilla, Robert Zemmer, Barker, Roger Shang mentioned. In this section, excerpts from the theories of some selected theorists are given for more familiarity.

Table 2: Familiarity with the views of constructivist education theorists

(Source: Author taken from Dewey, 1925-1981; Shariatmadari, 2018; Firoozi et al., 2015; Prince and Felder, 2006; Vygotsky, 1978; William, 2000)

Description			Theorist Structural
Proponents of "informal and useful life" education	One of the pioneers of pragmatism	:Books My Educational " (Beliefs" (1897 School and " (Society" (1900 Children and the " (Curriculum" (1902 Democracy and " (Education" (1916 Experience and " (Education" (1938	John Dewey 1859-) (1952
An alternative to "traditional fossilized and inflexible education"	One of the pioneers of social adaptation		

<p>The basis of guided participation education, cross-teaching, participatory learning and social interactions</p>	<p>Believes in the importance of cultural, historical and social aspects in cognitive development Believes in the interaction between the learner and the social environment as the main determinant of cognitive development</p>	<p>Russian Marxist psychologist and pioneer of social constructivism Placing the social child in the historical-cultural context in his model</p>	<p>Lu Vygotsky (1896-1934)</p>
<p>Believes in building knowledge through the transfer, organization and recognition of previous knowledge, information and experiences</p>	<p>Seek to discover how to achieve cognition through the interaction between experience and individual beliefs Believes in exploration as the foundation of learning</p>	<p>Leading Swiss psychologist studying cognitive development One of the pioneers of individual constructivism</p>	<p>Jean Piaget (1896-1980)</p>
<p>Looking for ways to gain deep understanding and meaningful learning</p>	<p>From the proponents of active constructivism</p>	<p>Developer of the theory of "meaningful verbal learning" is one of the cognitive theories and the background of the theory of constructivism</p>	<p>ديفيد أوسوبل¹ (1918-2008)</p>
<p>Believes in the role of language and environment as integral components of education Believes in collective wisdom and not personal</p>	<p>Influenced by the views of Kant, Leibniz and Gestalt psychology Believes in the construction of the mind through interaction with other human beings and culture</p>	<p>Educational psychology with a tendency towards constructive cognitive psychology in the 20th and 21st centuries</p>	<p>Jerome Brunner (1915-2016)</p>

¹ David Ausubel

<p>Believes in the construction of knowledge by the individual through interaction with the environment</p>	<p>Two principles of Glasserfield's theory of :constructivism Building knowledge -1 actively and with the learner thinking, not through passive reception Thinking as an -2 adaptive process organizing the learner's experimental world</p>	<p>One of the main exponents of constructivist thought</p>	<p>Ernest von Glaserzfeld (2010-1917)</p>
---	---	--	--

Constructive learning environment

Individual learning behavior is the result of the interaction between personality and environmental variables. Distinguishing the effect of these variables on learning is quite unclear, because personality variables are formed and consolidated in the environment, and environmental variables in turn affect personality variables (Yamini et al., 2008: 140). Different factors cause differences in human learning, but what has attracted the attention of educational psychologists and educational experts more than other factors is the learning environment. In the environment of real and virtual educational classes, the question always arises in what kind of environment can be best taught and learning (Yamini and Bagherinia, 2017: 15).

Learning environment is a general term that refers to the space where learners and teachers interact with each other and use different tools and information resources to pursue their learning activities (Wilson, 1996). Today, with a brief look at the specialized texts of educational psychology, one can find a lot of information about the various components of the process in the classroom learning environment, such as physical space and its psychological aspects (Slavin, 2013). Numerous studies conducted with thousands of students around the world show conclusively that the classroom environment affects students' academic achievement.

Although the learning environment is one of the factors affecting learning in students, but understanding the learning environment is more important. Perception of the learning environment is the common perception that students and teachers have of the classroom environment (Fraser, 2015).

Students' perceptions of the learning environment are recognized as an influential factor in their learning process, which Ramzden (1992) states: "In trying to change attitudes, we do not try to change students, but try to change their experiences, perceptions or perceptions of their learning environment." "Let's change."

Dart et al.'s (2000) study also confirmed the finding that understanding the learning environment is far more related to the in-depth study approach than the learning environment itself. Therefore, the importance of addressing the aspect of constructivism in the perception of the environment is evident in this section. As it turned out, for social adapters, knowledge is a human product and has a social and cultural basis (Gerdler, 1997; Ernst, 1999).

It is also learning a social process that is not only built within the individual and is not simply influenced by the external environment (Mahen, 1997). Social adaptive learning environment has two distinctive features and characteristics, including adaptiveness and being social. A constructivist environment is one that helps one to actively construct perceptions, archives, and other complex mental structures within oneself, rather than entering them from the outside.

This theory emphasizes the learner's activism in building knowledge and understanding. Shank also argues that a constructivist learning environment is one in which individuals learn, construct, and shape most of what they learn and understand (Shank, 2000), and learners gain their knowledge from their experiences (Armrod, 1995).

Another feature of this environment, in addition to constructivism, is its sociality, which refers more to the interactions between people, which is also called dialectical constructivism in terms of dynamics in the classroom.

By studying the theories put forward in the field of constructive or constructive education, suitable environments for this education should have the conditions that are discussed in Figure 2.

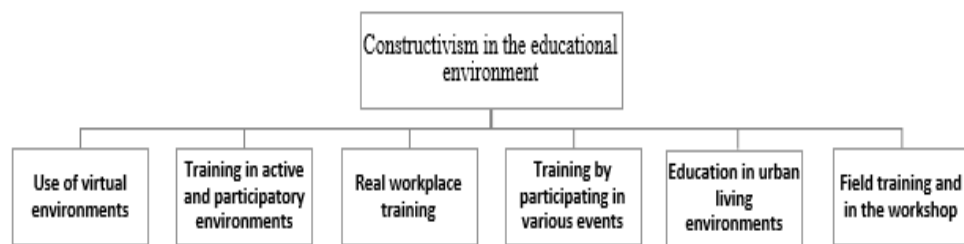


Figure 2 - Criteria of constructivism in the educational environment ((Source: Author)

Educational environments in the contemporary world must be able to adapt to the standards of constructivism. Today, educational institutions are increasingly expected to be flexible and efficient in performing new tasks. The ideas of environmental sentiment, proposed by Baker et al. In 1964, state that educational spaces need flexibility in buildings so that they can move from the classroom to the seminar room, from the individual study space to the study area for a number of Become students. In addition, they have suggested that future educational centers will be more like the office and library environment, where small groups study, discuss, and create learning and knowledge using technology (Barker et al., 1964: 36).

Also during the 1990s, a number of museums and schools, together as an educational complex, developed a new system of education called the museum-school. In this educational system, real world topics and the development process of exhibitions are defined based on constructivist programs and socio-cultural movements that learn based on long-term projects and internships. If the goal of learning is based on valid contexts and students, in addition to working on the real context, manage the organization, also learn their program and follow their interests (King and Frick, 1999, p. 5).


Two reports by the Department of Education and Skills in the United Kingdom in 2002 and 2003 emphasize the importance of design and



architecture as partners in a constructive education system. The OECD has also proposed six possible scenarios for the general public of future schools, including the collapse of traditional education systems and the move towards non-formal, structured learning networks (O.E.C.). CD, 2009). Figure 3 shows how communication and event-based learning environments relate.

To get acquainted with the activities carried out on a global scale to implement constructive programs in university education, Dr. Christine Ortiz, former Vice Chancellor of MIT University in 2016, presents a plan to build a non-profit research university that No classes, no lectures, no administrative disciplines, and even no major. According to Ortiz, the hundreds of years of rigid and inflexible structure of universities have not made progress in line with modern technology and have not been able to prepare students for life in the 21st century. The university is designed on the basis of "project-based learning", in which students are trained through a working group with each other on scheduled challenges. In this new institution, students design their own learning path and use a complex curriculum to achieve their goals. They see research as the most advanced form of project-based learning. At the beginning of the year, students design a research project in collaboration with the university and plan an individual training program related to it. Ortiz Group has developed a software platform for designing intelligent computer-based curriculum that will help students and scholars to create educational pathways between disciplines and with some limitations (Mahdin, 2016). Due to the fact that the university does not use classrooms, Ortiz believes that its environment includes large project spaces, large concentrated laboratories, and large collective spaces, with the aim of making all projects interdisciplinary (Denisco, 2016).

Accordingly, in recent years, several faculties of architecture have changed the existing educational spaces and even turned industrial and workshop environments into educational places in order to implement their constructive and flexible programs; In this way, they can move architecture education towards event-oriented and constructive learning. Table 3 shows the educational spaces of some of these universities and analyzes them.

Table 3 - Optimization of architectural education spaces in global examples (Source: Authors taken from Hill, 2013)

Image	Description	Learning environment	University name
	<p>In 2000, the company moved to a freight depot on the outskirts of the city center. A place that was once empty of people, but today has become an integral element in the art of the city. The building was renovated by alumni and Sai Arc professors and turned into 500</p>	<p>Cargo warehouse</p>	<p>Southern California Institute of Architecture Shadow-Arc</p>

	<p>student spaces with studios and spaces for presentation and exhibition.</p>		
	<p>Built in 1939, the Heinmann Research Building in the United States was redesigned and reopened in 2011 as an appendix to the School of Architecture. The Central Hall studios are now located on the site of the Industrial Research Laboratory and the former car showroom. A high central hall in the middle of this building is dedicated to holding events, theater performances and various celebrations..</p>	<p>Industrial Research Laboratory and Machine Show</p>	<p>Georgia Tech College of Architecture²</p>
	<p>The building was created by transforming a chocolate factory into studios, open-air amphitheaters and rooftop terraces. The studios are located in the garages of the previous building, which are covered during the colder months. Terraces and roofs are also places to eat and drink, which have become a popular place to spend time in the area.</p>	<p>Chocolate factory</p>	<p>Moscow Institute of Media, Architecture and Design</p>

² - [Georgia Tech College of Architecture](#)

	<p>The school building caught fire in 2008. Therefore, five design companies were taken to transform the 100-year-old building into a new location for the School of Architecture, and lecture halls, studios, workshop offices, libraries, restaurants, and informal venues were designed to learn and hold events and exhibitions in the building.</p>	<p>Renovation of old buildings and addition of new spaces</p>	<p>Faculty of Architecture and Environmental Technology, Delft University, The Netherlands</p>
---	--	---	--

In the following, the environments of teaching university architecture in Iran and the possibility of implementing constructive educational programs in the spaces used have been studied.






In this section, the results obtained from the questionnaire in relation to the possibility of adopting constructivist criteria in the architectural education environments of Shiraz have been studied. After that, the master's degree education spaces in Shiraz have been identified and analyzed, and the challenges of advancing the inefficiency of the spaces and the proposed solutions have been expressed.

The indicators of environmental constructivism that were measured through a questionnaire were: the amount of field training in workshops, the amount of training in urban areas, the amount of training through holding events, the amount of training through working in real environments, The amount of education in participatory and interactive environments and the amount of use of virtual environments in education.

In a general summary among the studied factors, the index of education through work in the real environment has the lowest score. Considering the preference of learning skills related to industry and the professional community to learning basic knowledge, which is one of the basic presuppositions of architecture schools (Azizi, 2010, p. 46), the need to address this issue becomes apparent. The next indicators that need to be addressed are priority, training in urban living environments and field training in workshops, respectively. On the other hand, the education index in active and participatory environments is in a favorable situation, which indicates that education is created through class interactions and doing things as a group. Figure 5 shows the results of quantification and scoring of indicators.

As the results of the studies show, the educational environments used do not meet the needs of the present era for event-oriented and constructive free education. To better understand these environments, Table 4 introduces the spaces used for master's degree education in architecture of Shiraz universities.

Table 4 - Introduction of universities and higher education centers with discontinuous master's degree in architecture in Shiraz in terms of space used (Source: Author)

Hafez Institute	Eram Institute	Apadana Institute	Islamic Azad	National Shiraz
				
Modified school	Residential house has been changed to use and has a set of blocks in the open environment	Residential building on the 16th floor, changed use	Designed for the university in general	Designed for the University of Art and Architecture in a postmodern historical style

In a general summary, the spaces used for teaching architecture can be divided into two categories: 1- spaces designed for the university and 2- spaces that have changed their use and become a university. Figure 5 shows this general dichotomy with its subcategories in the research area.

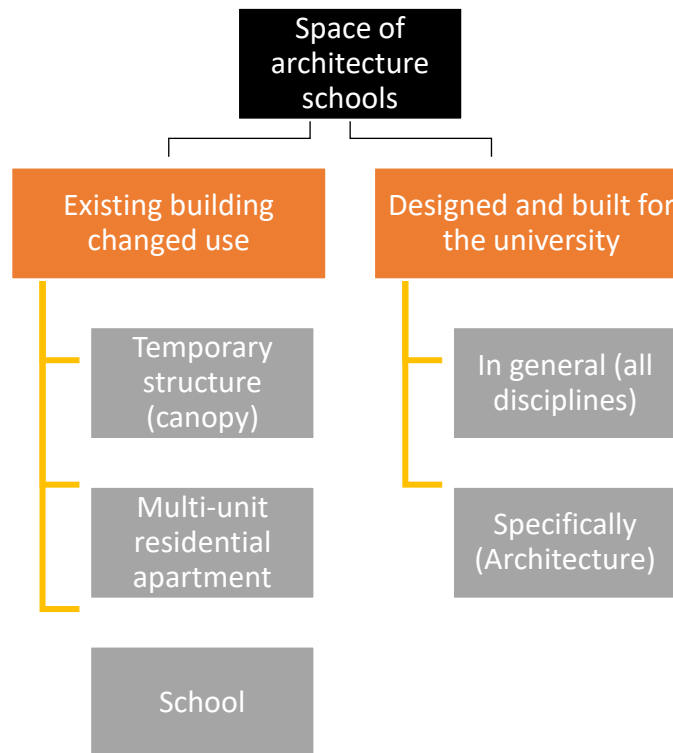


Figure 5- Architecture university education space (Source: Authors)

Due to the traditional educational environments available to architecture universities, there is a lack of spaces for event-oriented and practical education. Among the spaces used, the category designed for the university can be divided into general friends. In the part that is generally designed for the university, architecture education, like other disciplines, is held in traditional classes. Teaching and learning in such classes does not provide students with the opportunity to participate in education and is mostly done as a central teacher. Those universities that are designed for the fields of architecture, although they have classes for workshop training, but lack event-oriented spaces for teamwork and flexible spaces for free programs, as well as workshop spaces equipped with machines. Construction tools are not intended to execute real-size specimens.

Among the buildings whose use has been changed to a university, schools have the potential to be most adapted to structuralist programs due to the use of foyers and interactive spaces. Due to the fact that residential buildings and condos, etc., do not have the possibility of creating flexible and event-oriented spaces, part of their open and semi-open spaces can be dedicated to the implementation of programs, workshops and mass events. In recent years, some private and semi-private schools and affiliated organizations, in order to eliminate this shortcoming of architectural education spaces, have held courses, competitions and workshops in urban and workshop environments, so that they can communicate with Poorly strengthen education and profession. Of course, it should be noted that in the field of educational programs, the lack of constructivism and flexibility is quite obvious, which needs attention and attention.

Figure 7 shows solutions to increase the efficiency of buildings used by architecture universities by separating the two categories designed for the university and the given change of use.

In addition to the above, the emphasis is on virtual training, the formation of Internet think tanks and interactions, virtual events including courses, lectures by native and non-native professors, competitions, the possibility of participating in project judging from around the world and finally the whole use The world, including home, cafes, buses, travel, etc., as an educational space can help us achieve our long-term goals of implementing free, constructive, flexible programs that meet the needs of the present age.

CONCLUSION

Architecture education spaces in Iran, whether designed for the university in general or the University of Art and Architecture in particular, or in the form of changing the use of existing buildings, all more or less follow the traditional structure. This rigid and traditional structure greatly reduces the possibility of integrating spaces and implementing free and flexible programs. Existence of medium and poor quality educational buildings without equipment is one of the biggest obstacles to improving the quality of architectural education. Therefore, the need to redesign and restructure such spaces, or equip places that can be used for professional and event-oriented training, a university or even a group of universities in the city or province, is very obvious. Education in the present age with the expansion of the Internet and changes in market needs, in terms of concept and nature, has undergone fundamental changes. Many academic environments around the world have taken basic steps to synchronize their educational spaces with modern teaching approaches, including constructivist and event-oriented approaches. The use of factory premises, workshops, museums, the use of urban spaces, training through work in real environments and the use of virtual environments can be included in this category. The use of such strategies creates knowledge in the student's mind through gaining experience and interaction and paves the way for students to enter the profession. It is worth mentioning that the existence of constructive and flexible educational programs in the field of architecture is also one of the items that need research and study in future research.

REFERENCES

- Aghazadeh, Muharram. (2012). Educational Technology: Based on the Constructivist Approach, Tehran, Published by: AIJ.
- Barzegar Befrooi, Kazem; Khezri, Hassan; Shirjahani, Azam (2013). The emergence of a constructivist approach and change in learning environments, the Fourth Iranian Association of Philosophy of Education: Philosophical foundations of change in the Iranian education system.
- Barzegar Befrooi, Kazem; Shabanian, Saeedeh and Shirjahani, Azam. (2015). The Relationship between Perceptions of Constructivist Learning Environment and Metacognitive Awareness of Male and Female Students, Second National Conference on Sustainable

- Development in Educational Sciences and Psychology of Social and Cultural Studies.
- Prince, Michael J.; Felder, Richard.(2006). *Inductive Methods: Definitions, Comparisons and Research Foundations*, translated by Hashemfar Danesh, Kavir Publications, Tehran: 2008.
- Heydari, Ali Akbar; Yazdanfar, Seyed Abbas; And Behdadfar, Nazgol. (2013). Presenting a model to explain the effective parameters in the meaning of place and non-place of architecture, *Scientific-Research Journal of the Iranian Scientific Association of Architecture and Urban Planning*, 5, 49-62.
- Shariatmadari, Ali. (2018). *Principles and Philosophy of Education*, Publisher: Amirkabir Publishing House.
- Zarghami, Ismail; Abdolhamid, Ghanbaran; Pahlavani, Mehdi (2011). *Criteria for designing future educational spaces*, the first national conference on education in Iran 1404, Tehran: Research Institute for Science, Technology and Industry Policy.
- Dear, happiness. (2010). The need for a flexible system of architectural education in order to respond to global and local challenges of sustainability, *Journal of City Identity*, Fifth Year, No. 7.
- Fardanesh, Hashem. (2015). *Educational Design: Basics, Approaches and Applications*, Publisher: Samat Organization.
- Firoozi, Zahra, Karami, Morteza; Saeedi Rezvani, Mahmoud; Karshki, Hussein (2015). Evaluation of the effectiveness of David Merrill method in in-service education of teachers, *Journal of Education and Learning Studies*, Volume 7, Number 1, Spring and Summer 2015, pp. 49-70.
- Kamel Nia, Hamed. (2015). *Basic concepts in university architecture*, Mashhad, Ferdowsi University Press.
- Kamel Nia, Hamed. (2009). *Grammar for Designing Learning Environments*, Publisher: Sobhan Noor.
- Yamini, Mohammad; Bagheri Nia, Hassan; (2017). Study of psychometric properties of students' perception of the social adaptive learning environment in the university and comparison of its preferred and existing form in students, *Journal of Psychological Studies and Educational Sciences*, Volume 3, Number 3.
- Yamini, Mohammad; Kadivar, Parvin, Farzad, Waliullah; Moradi, Alireza (2008). *The Relationship between Perceptions of Social Constructivist Learning Environment, Thinking Styles with a Deep Approach to Learning and Learning Outcomes or Consequences*, *Psychology*, University of Tabriz, Third Year, No. 12.
- Aldridge, J. M., Dorman, J. P., & Fraser, B. J. (2004). Use of multitrait-multimethod modelling to validate actual and preferred forms of the technology-rich outcomes-focused learning environment inventory (TROFLEI). *Australian Journal of Educational & Developmental Psychology*, 4, 110-125.
- Ashrafi, R. & Kamelnia, H. (2016). Teachers' Participation in Designing an Educational Complex: Applying "Role" Technique in Iran. *International Journal of Applied Science and Technology*, 6(3), 14-30.

- BARKER, R. G., GUMP, P. V. et al. (1964). *Big School, Small School: High School Size and Student Behavior*, Stanford University Press, Stanford, California.
- Boys, Jos. (2010). *Towards Creative Learning Spaces: Rethinking the Architecture of Post-Compulsory Education*, Publisher: Routledge.
- Ceylan, Salih., Kancioglu, Mualla., Soygenis, Murat. (2010). *CONSTRUCTIVIST STUDIO: AN APPROACH TO ARCHITECTURAL DESIGN EDUCATION*. 2nd International Conference on Education and New Learning Technologies. Barcelona, Spain.
- Ahmad, C. N. C., Ching, W. C., Yahaya, A., & Abdullah, M. F. N. L. (2015). Relationship between constructivist learning environments and educational facility in science classrooms. *Procardia-Social and Behavioral Sciences*, 191, 1952-1957.
- Dart, B., Burnett, P., Purdie, N., Boulton-Lewis, G., Campbell, J. & Smith, D. (2000). Students' conceptions of learning, the classroom environment, and approaches to learning. *Journal of Educational Research*, 93(4), 262-270.
- DeNisco Rayome, Alison. (2016). Why the university of the future will have no classrooms, no lectures, and lots of tech, October 3. <https://www.techrepublic.com/article/why-the-university-of-the-future-will-have-no-classrooms-no-lectures-but-lots-of-tech/>
- Dewey, John. (1981/1925). *Experience and Nature*, In Jo Ann Boydston. (ed.), *John Dewey: The Later Works 1925-1953*. Volume 1. Carbondale. IL: Southern Illinois University Press.
- Duffy, T. M., & Cunningham, D. J. (1996). Constructivism: Implications for the design and delivery of instruction. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (pp. 170–198). New York: Scholastic.
- Duffy, Thomas M., Jonassen, David H. (1991). Constructivism: New Implications for Instructional Technology? *Educational Technology*, Vol. 31, No. 5 (May 1991), pp. 7-12.
- Ernest, P. (March 23, 1999). *Social Constructivism as a Philosophy of Mathematics: Radical Constructivism Rehabilitated?* [Internet]. Available: [HUhttp://www.ex.ac.uk/~PErnest/soccon.htm](http://www.ex.ac.uk/~PErnest/soccon.htm)UH [2001, March 28].
- Fraser, B. (2015). Classroom learning environments. In: Gunstone, R. (Ed.), *Encyclopedia of science education*, Springer Netherlands. 154- 157.
- Gijbels, D., Segers, M., & Struyf, E. (2008). Constructivist learning environments and the (im) possibility to change students' perceptions of assessment demands and approaches to learning. *Instructional Science*, 36(5-6), 431-443.
- Gomes, G., & Wojahn, R. M. (2017). Organizational learning capability, Innovation and performance: study in small and medium-sized enterprises (SMES). *Revis ta de Adminis tração (São Paulo)*, 52(2), 163-175.
- Gredler, M. E. (1997). *Learning and instruction: Theory into practice* (3rd Ed). Upper Saddle River, NJ: Prentice-Hall.

- Harrison, Andrew. Hutton, Les. (2013). *Design for the Changing Educational Landscape: Space, Place and the Future of Learning* Paperback, Publisher: Routledge; 1 edition.
- Hill, John. (2013). *Spaces for Learning*, website: <https://www.world-architects.com/en/pages/insight/spaces-for-learning>.
- Jalili, L; Ghafourian, M; Toopal, T; Taghipour, M. Comparative Study of Khaje Rashid al-Din Views on Rab-e Rashidi Islamic Utopia and Kevin Lynch Ideas. *Journal International Journal of Archaeology*. 2015, 3(5): 39-47.
- Khodakhah Jeedi, laleh, Fereidoon Kasrayee, Sanaz Khodakhah Jeedi & Mohammad Taghipour (2016), *The Analysis of Effect of Colour Psychology on Environmental Graphic in Children Ward at Medical Centers*, *Psychology and Behavioral Sciences magazine*, 5(2): 51-61.
- Kurt, Sevinc. (2011). Use of constructivist approach in architectural education. *Procedia Social and Behavioral Sciences* 15 (2011) 3980–3988.
- Kwan, Y. W., & Wong, A. F. (2015). Effects of the constructivist learning environment on students' critical thinking ability: Cognitive and motivational variables as mediators. *International Journal of Educational Research*, 70, 68-79.
- King, Kira S., Frick, Theodore. (1999). *Transforming Education: Case Studies in Systems Thinking*. Annual meeting of the American Educational Research Association.
- McMahon, M. (1997, December). *Social Constructivism and the World Wide Web - A Paradigm for Learning*. Paper presented at the ASCILITE conference. Perth, Australia.
- Mohdin, Aamna. (2016). A dean from MIT is starting a radical new university with no majors, lectures, or classrooms. January 29. <https://qz.com/605941/>
- Nie, Y., & Lau, S. (2010). Differential relations of constructivist and didactic instruction to students' cognition, motivation, and achievement. *Learning and Instruction*, 20(5), 411-423.
- Nix, R. K., Fraser, B. J., & Ledbetter, C. E. (2005). Evaluating an integrated science learning environment using the constructivist learning environment survey. *Learning Environments Research*, 8(2), 109-133.
- OECD: Organisation for Economic Co-operation and Development, (2009). *Education at a Glance 2009*, <http://www.oecd.org/edu/eag2009>.
- Ormrod, J. E. (1995). *Human Learning*. Englewood Cliffs, New Jersey: Merrill.
- Ramsden, P. (1992). *Learning to teach in higher education*. London & New York, Routledge ISBN 0-415-06414-7 (hbk); 0-415-06415-5 (pbk), 290 pp. np.
- Ramsden, P. (1988). Context and strategy. In: Schmeck, R. R. (Ed.), *Learning strategies and learning styles*, New York, Springer US. 159-184.
- Rezvani Befrouei .A; Ghobadian, V.; Taghipour, M. The design of high-rise building with ecological approach in iran(Alborz Province). *International Journal of Modern Trends in Engineering and Research*, 2015, 2(10): 455-464.

- Rezvani Befrouei .M; Taghipour .M. "Identification and Management of Risks in Construction Projects". American Journal of Civil Engineering. 2015, 3(5):170-177.
- Santrock, J. W. (2012). Educational Psychology. New York: McGrawHill.
- Shunk DH. (2000). learning theories: An educational perspective (3rd Ed). Upper Saddle River, NJ: Prentice-Hall.
- Slavin, R., Translated by Yahya Seid-Mohammadi (2013), Educational Psychology, Theory and practice, Tehran, Ravan Press. (In Persian).
- Seddigh Marvasti, B.; Beheshti, S.M.A.; Chegini, H.; Taghipour, M. studied Assessing the Effect of FRP System on Compressive and Shear Bending Strength of Concrete Elements. International Journal of Innovative Research in Science. Engineering and Technology, 2015, 4(11): 11511-11524.
- Taghipour .M; Seraj .F; Amir Hassani .M; Farahani Kheirabad .S. "Risk analysis in the management of urban construction projects from the perspective of the employer and the contractor". International Journal of organization Leadership. 2015, 4, 356-373.
- Taghipour .M; Hoseinpour .Z; Mahboobi .M; Shabrang .M; Lashkarian .T, " Construction projects risk management by risk allocation approach using PMBOK standard". Journal of Applied Environmental And Biological Sciences, 2015, 5(12), 323-329.
- Taghipour .M; Seraj .F; Amin, M.; Changiz, D.M. "Evaluating CCPM method versus CPM in multiple petrochemical projects". Management, International Technology and Science Publications (ITS), 2020, 3(3), 1-20.
- Taghipour, M; Yadi, H. "Seismic Analysis (Non-Linear Static Analysis (Pushover) and Nonlinear Dynamic) on Cable-Stayed Bridge. ". American Journal of Civil Engineering, 2015, 3(5), 129-139.
- Taghipour .M; Ahmadi Sarchoghaei .J. " Evaluation of Tourist Attractions in Borujerd County with Emphasis on Development of New Markets by Using Topsis Model" . Science Journal of Business and Management(Science PG),2015, Vol. 3, No. 5, pp. 175-189.
- Abdollahzadeh .N; Taghipour .M. " Identify and Priorize Suitable Area for Ecotourism Development using Multi-criteria Analysis for Development of the Tourism Market in Iran (Nathanz City)" . International Journal of Innovative Research in Science,Engineering and Technology (IJIRSET),2015, Vol. 4, No. 11, pp. 11525-11536.
- Mirzaie .F; Nazari .A; Zargham Boroujeni .H; Taghipour .M. " The Relationship Between Social Bearing Capacities with Conflict as a Result, in the Perception of the Visiting Historical Sites" . Journal of Investment and Management, 2015, Vol. 4, No. 6, pp. 403-408.
- Taghipour .M; Shabrang .M; Habibi Machiani .H; Shamami.N " Assessment and Analysis of Risk Associated with the Implementation of Enterprise Resource Planning (ERP) Project Using FMEA Technique (Including Case-Study)" . Management, International Technology and Science Publications (ITS), 2020, Vol 3, Issue 1, 29-46.
- Taghipour .M; Seraj .F; Seraj .M. " Necessity Analysis and Optimization of Implementing Projects with The Integration Approach of Risk

- Management and Value Engineering”. A Journal of Economics and Management, 2015, 5(1), 330-346.
- Taghipour .M; Soofi Mowloodi .E; Mahboobi .M; Abdi .J. ” Application of Cloud Computing in System Management in Order to Control the Process”.Management, International Technology and Science Publications (ITS), 2020, Vol 3, Issue 3, 34-55.
- Taghipour .M; Vosough .A; Kazemi .N; Ahitabar .P. ”The Study of the Application of Risk Management in the Operation and Maintenance of Power Plant Projects”. International Journal of Business Management, 2018, 3(3), 98-110.
- Taghipour .M; Mahboobi .M; Nikoeifar .A; Soofi Mowloodi .E. ”Analysing the Effects of Physical Conditions of the Workplace on Employee’s Productivity (Including Case Study) ” . International Journal of Environmental Protection and Policy,2015, Vol. 3, No. 4, pp. 111-119.
- Vygotsky, L. S. (1978). Tool and symbol in child development, In M. cole V. Johon s. Scribrer & E.soubeman (Eds.), Mind in society: The development of higher psychological processes. Cambrige: Harvard University Press.
- Williams, Mary M. (2000). Models of Character Education: Perspectives and Developmental Issues, the Journal of Humanistic Counseling, Education and Development, Volume39, Issue1, Pages 32-40.