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## Original Research Article

## Explaining the Effective Out-of-University Factors of Architectural Education on Contemporary Iranian Architects from the Perspective of University Professors\*

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### Abstract

**Problem statement:** Critics of today's Iranian architecture believe that Iranian architecture, which is many centuries old, now lacks its values and identity and is considered the product of modern architecture schools and modern architecture education, and the abnormalities in it are related to the quality of architectural education and profession. Investigating the status of architectural design workshops has been one of the most important challenges for researchers in the country in recent decades; but what is clear is that architecture is influenced by various factors, the existence of which obscures the role of the architect and his teachings as the creator of the work.

**Research objective:** The purpose of this article is to identify the influential components in education on today's architecture from the perspective of architecture professors. In fact, this article seeks to clarify, reveal, and explain the components and factors desired by professors of architecture.

**Research method:** This research is based on the paradigm of social interpretivism from a cognitive perspective and is of a qualitative type. The strategy of choice in this research is that of the underlying theory. The analyses were performed using the systematic coding method of Strauss and Corbin using "MAXQDA 12" software.

**Conclusion:** The results show that a set of conditions, including causal, intervening, and contextual conditions, affect the core category, but intervening conditions and contexts that are extroverted play a major role. Extracurricular factors include pre-university education, media culture, and organizations and institutions related to construction.

**Keywords:** *Architecture Education, Contemporary Iranian Architects, Architecture Professors, Out-of-University Factors.*

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## Introduction

The field of education is one of the most important infrastructures for the comprehensive development of the country and serves as a basic tool for the promotion of human capital in the 21st century, and is central to a knowledge-based economy (Yamani Douzi Sorkhabi, 2009). The growth and development of societies have increasingly depended on the qualitative development of universities and higher education institutions. One of the most important and influential areas in the field of progress is architecture because this field is inextricably linked with the economy, art, and culture of society. In addition, buildings are among the most sustainable and economically valuable products of civilizations that are inherited and indebted to the cultural and artistic dimensions. Over the last half-century and since the establishment of the faculties of architecture, this field has had a profound impact on the space and art form of the country. This necessitates the study of the course of study in this field until the building is built by learners.

Contemporary Iranian architecture, which is the product of modern education in architecture schools, is different from the past architecture, lacks the necessary richness and beauty, and during these years, by losing its identity, it has lost the values hidden in past architecture (Taghi, 1996, 56). It seems that the inconsistency of educational programs with the culture of our society and its backwardness from the world society does not meet the needs of learners and the effects of learners in the professional world do not meet expectations (Mohammadi Bolban Abad, Iranmanesh & Bemanian, 2009, 114) because apart from critics and high-ranking officials of the country who are critical of the current situation and want architecture with identity, other people who are related to architecture in educational or executive centers are also critics of the current situation (Taghizadeh, 2000, 100).

Investigating the status of architectural design workshops has been one of the most important challenges for researchers in the country in recent decades. But what is clear is that today many factors

have influenced architecture, the existence of which obscures the role of the architect as the main shaper of the building. The social, political, economic, and cultural structure of the past was simple and obvious but now, in the modern world, these structures are complex and changing. Communication in the past was limited, definite, slow, and defined, and today it is vast, rapid, and varied; in the past it was controllable, but in today's societies it is fast, intense, and sometimes sudden and uncontrollable.

The above differences in the social, economic, and cultural contexts have made architecture complex, variable, and difficult (Taghi, 1996, 56). This is the point where it seems that just examining the course of architecture education cannot be enough in the direction of the evolution and reconstruction of architecture today. This research seeks to identify the components affecting today's architecture from the perspective of architecture professors. Accordingly, the most important questions of the present study are: What are the dominant and effective components of contemporary architecture today? How have organizational factors and macro programs in universities and ministries affected architecture education? What are the intervention factors? Are these factors extracurricular or intra-university? What are the implications for today's architecture? And finally, what is the dominant paradigm of architectural factors in Iran today?

These questions have led the researchers of this article to a wider scope of research and have encouraged them to conduct a qualitative study to examine causes and factors associated with in or out-of-the faculties of architecture. The research in the country has been carried out mostly on the issue of design, design workshops, the content of courses, and its analysis, and in general, the focus has been on architectural designs and how to deal with them. It seems that these studies have only dealt with the departments within the universities and the subject has not been analyzed more comprehensively. Based on what has been said, the main purpose of this study is to investigate and analyze how the effective factors outside the

university contribute to the formation of today's architecture (using the experiences of professors in architecture schools).

## Literature Review

Studies on architecture education and on pathology and methods of raising its quality level are very extensive (Salama, 2005, 1995; Seidel, 1981). Most of this research in Iran has been done by researchers in the form of doctoral dissertations, scientific and research articles, and research projects, which have been partially researched by each researcher due to the breadth and scope of the subject.

Since the research background is divided into different sections, an attempt is made to address them thematically. Part of the topic is the design process in design workshops, creating creativity and quality of education and using existing talents, understanding the design problem, architectural education methods, designing models to guide learners, critique of architectural education at present and its adaptation to the past, analysis of architectural schools, the educational content and the role of different courses on architecture education, the role of educator and learner, evaluation processes, identity crisis, and learning styles. Extensive research has been attempted to recognize the methods of traditional architecture education and compare them with modern methods of architecture education (university), history of architecture education, strategic plans in different universities, and educational approaches that can be effective in creating appropriate knowledge and showing the path of education (Ghoddusifar, Etesam, Habib & Panahi Barjay, 2012; Yaran, 2012; Qayyoomi Bidhendi & Sepehri, 2016; Núñez-Andrés, Martinez-Molina, Casquero-Modrego & Suk, 2021; Davis, 2002; Farahat, 2011).

Another field to which researchers have paid attention is the subject of design workshops, fostering creativity and promoting practical knowledge and understanding of the issue of architecture in architectural design to improve the quality of architecture education in design workshops (Daneshgarmoghaddam, 2009; Farzian & Karbasi, 2014; Nariqomi & Mahmoudi, 2016;

Dinarvand, Nadimi & Alai, 2017; Mirjany & Nadimi, 2019; Naghdbishi, Najafpour & Naghdbishi, 2019; Sharif, Maarof & Meor Razali, 2012; Eilouti, 2012; Johansson-Sköldberg, Woodilla & Çetinkaya, 2013).

Another part is related to research on the content of the courses offered in the field of architecture and model design to improve the content and teach architectural design, content review, the effect of different courses on architectural design and measurement and efficiency of courses, topic analysis, critique and learning, and education critical view of learners and review of studies and research on strategies for organizing the quality of education in general (Lang, 2005; Lawson, 2004; Mahdavi pour & Jafari, 2012; Soleimani, 2014; Gharibpour & Toutounchi Moghaddam, 2016; Sedaghati & Hojjat, 2019; Mahdavinjad, 2006; Razaghi Asl & Rahimi Ariaee, 2016; Guilford, 1959; Collins, 1971; Hillier & Leaman, 1972-73; Cave, Hanney, Henkel & Kogan, 1997; Tale'pasand, 2009; Yıldırım & Yavuz, 2013; Sayed & Ahmed, 2015; Callahan, Shadravan, Obasade & Hasenfratz, 2019).

The basis of any training is on two main pillars, namely the learner and the trainer, which have attracted the attention of researchers. Available studies have focused on the role of the learner and trainer, their participation, and how such relationships contribute to group creativity and motivation (Moazzami, 2012; Moosavi, Saghafi, Mozaffar & Izadi, 2019; Kianersi, Mozafar & Khosravi, 2019; Salama, 2006). But in the same line of research on the learner, there is literature on talent identification and development of their talents, the absorption of these talents, and the study and analysis of their cognitive differences and pathology during high school (Hodjat & Ansari, 2010; Mansurnejad, 2017; Faizi & Dezhpasand, 2019; Hosseini, Falamaki & Hojat, 2019; Gooran, Foroutan, & Dejdard, 2021; Demirkan & Demirbas, 2003, 2007; Akinyode & Khan, 2016; Kvan & Jia, 2005; Maturkarn & Moorapun, 2017).

Judging the designs presented by the learners and determining the correct methods of measuring and evaluating the design process are other areas of research conducted by researchers (Masoudinejad, 2012; Sameh

& Izadi, 2015). Although all these studies analyze the problems, pillars, and principles of architecture education and it is appropriate to examine and evaluate each of them separately. However, from the authors' point of view, the most problem is to understand how these factors can work together and understand them from the point of view of experienced professors in this field.

## Theoretical Foundation

### • Architectural education

Architectural education is of special importance due to its special complexity and the breadth and related knowledge it offers. Some researchers consider the primary goals of architecture education to be the training of competent or creative designers or builders with critical and moral thinking skills that will lead to the social, economic, and cultural development of society, at both national and global levels (Schreiber, 2010, 13-18). Architecture is one of the few disciplines in which various sciences, technologies, and arts are involved in its formation, evolution, development, and manifestation (Taghizadeh, 2000, 100), and the answer to the problem of architecture is done in different ways (Roberts, 2006, 167). Architecture education is a complex topic that may always remain as astonishing as the discussion of architecture itself (Lawson, 2004). To work in the field of architecture, an architect must equip himself with a variety of branches of science (Kurt, 2009).

Before modern education in Iran, the methods of traditional architecture education in Iran were common. This method was mainly rooted in practical methods in the style of student-master. About 80 years ago, the first school of architecture was established following the De Bois Art School, and in the following years, graduates returned from other countries and entered Iranian education, and the methods of teaching architectural schools became more diverse (Nadimi, 1991, 5). The School of Fine Arts was based on a set of design workshops, each of which was run by a single manager, usually a trained architect with a specific character. Upon entering the studio, the students were trained

to enter the competition, which consisted of three sections. In the first stage, they were taught the basics and sketches. In this section, volunteers were asked to design a simple architectural structure using the principles of classical architecture. In the second part, they were asked to draw a large-scale architectural decorative element such as a capstone. The third part was a comprehensive written test that tested the practical knowledge of the candidates (Al al Hesabi & Norouzian Maleki, 2009, 212).

The Faculty of Architecture at the National University was also established in 1960. The founders of the field of architecture in this school were educated in Italy, and for this reason, the schools and methods of Italian architecture dominated the teaching at the school. Unlike the School of Fine Arts, the students of this school were educated in the fields of application and performance rather than mere design. After several decades of master's degrees in architecture, this course, which until 1998 was a defined course for the field of architecture in all Iranian universities and was the only continuous master's degree in engineering, was eliminated, and universities were required to accept students in the bachelor's degree in architecture trained with a new program (Taghi, 2008, 127).

### • Design knowledge

Architectural education is to transmit concepts and knowledge that contribute to architectural practice or the creation of architectural work. The collection of these concepts and knowledge constitutes the knowledge of architecture. Part of this knowledge is understood to be in the form of practical knowledge in the field of design and surrounding skills, and another part, in the form of theoretical knowledge, refers to concepts and ideas that, in the form of theoretical foundations of architecture, connect architecture with fields and disciplines that are somehow related to architecture (Lang, 2005, 25). Thus, due to the intermediate nature of architecture, architectural knowledge encompasses a range of objective empirical concepts in the field of natural sciences to rational mental concepts in the field of philosophy.

The design of this general framework for the

theoretical knowledge of architecture proves that empirical knowledge plays an important role in shaping the knowledge of architecture. Architectural science is constructed by both “theory” and “practice, so with the definitions provided above, it can be concluded that design knowledge consists of two parts: Theoretical knowledge and practical knowledge. Practical professional knowledge is developed and expanded from within during experience. Its content sets it apart from other professions (Abbott, 2014).

Knowledge and its definitions contain at least two types of content: a) written content and b) oral content (Fathi Vajargah, 2016). In the field of architecture, the courses offered have an important section called written content, which is compiled as textbooks. Written content is a set of information, knowledge, and skills the process of which involves a specific course and in a specific subject area and can make the learner possess the information and then knowledge in that subject. Oral content refers to the instructor’s teaching and explanations in the classroom, and generally, anything that is not written down is oral content (Fig. 1).

## Research Methodology

This research is based on the paradigm of social interpretivism from a cognitive perspective and is of a qualitative type. The strategy of choice in this research is the strategy of contextual theory. The analyses were performed using the systematic coding method of Strauss

and Corbin. Baseline theory means a theory derived from data that is systematically collected and analyzed during the research process (Strauss & Corbin, 2008). Whenever the researcher intends to explore the experiences and views of individuals to formulate a theory, the grounding theory will be a suitable method (Marofi, Hassani & mosapour, 2021, 82). In this research, the aim is to answer the questions based on the experiences of individuals and to introduce the desired concepts, explanations, and views of educators. In the light of these studies, the researcher obtains a clear view of the phenomena, which can provide a basis for presenting innovative, enlightening, and useful solutions. The data of this study were collected through in-depth and semi-structured qualitative interviews with 34 experts in teaching architecture in the faculties of architecture (public and Islamic Azad and non-profit universities) who are teaching full-time and part-time in a time process of three years. After interview 27, the data were completely repetitive and theoretically saturated, but to be sure, we continued interviews with all 34 participants. The Corbin Strauss method was used to code data at three levels of open coding, axial coding, and selective coding in this study (Fig. 2). The data were identified, registered, described, and classified during the re-coding stage, and the concepts and categories identified during the re-coding stage were linked in a new parsing and synthesis during the axial coding stage. Finally, through selective coding, an attempt was made to extract the model from the heart of the data.

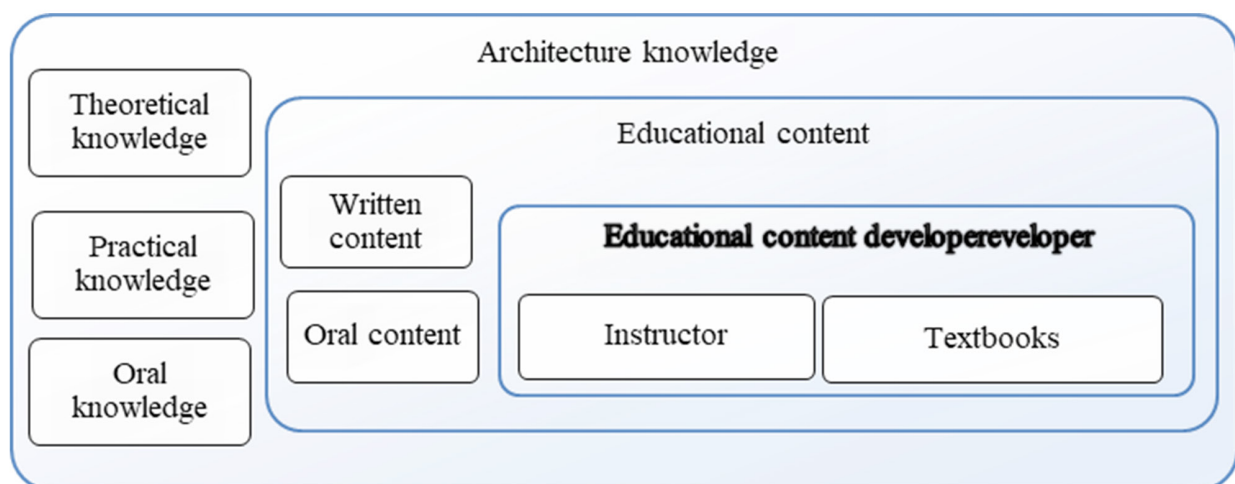


Fig. 1. Steps to acquire architectural knowledge. Source: Authors.



## Research Findings

During the analysis, the interviews were first implemented manually, and in the line-by-line analysis of the interview text, codes were extracted. Each initial code, within the text of the interviews, was underlined and its meaning was summarized. These codes were then implemented in the MaxQuoda software. First, 3986 codes were identified in the open coding stage. This number was reduced to 726 and then to 211 codes, and codes with the same concepts were merged, and then the subcategories were reduced to 68 and 21 main categories. To better understand the steps of open coding in Fig. 3, getting from the secondary code to the category of “design knowledge” is presented as the main category. Researchers developed manual coding and software coding in parallel, and finally combined and explained the results of the two steps to be able to draw a paradigm model of theory formulation in contextual theory (Fig. 3).

### • Causal conditions

Findings from data-driven coding showed that a great number of factors are influential in this area (Fig. 1). The core category, which is “design knowledge”, has been endorsed by many educators, has high reproducibility, and is supported by the three concepts of practical knowledge, theoretical knowledge, and oral knowledge (Fig. 4). The three main pillars of educators, learners, and higher education are the main factors that have influenced the core category. In Fig. 5, the factors related to the educator (main specialty of professors, professor’s academic level, professor’s

educational background, professor’s design history, teaching motivation, promotion of professors) and the factors related to the educator (talent identification, non-bachelor admission, high-level admission, cognitive skills) and higher education are described in detail.

### • Intervening conditions

Interventional conditions modify or change causal conditions and affect strategies (Creswell & Poth, 2016). A review of intervening variables in order of importance includes media, engineering, municipal laws, government restrictions, and trade unions. The number assigned to these codes indicates that the scale of the formation of these maps beyond the schools of architecture has influenced the main phenomenon.

The use of the media has been embodied in many forms of daily life. In this research, media code is associated with frequency. In addition to the information they provide to their audiences, the mass media provide interpretations and analyses that gradually form part of the cognitive systems of individuals. In social networks, these interpretations can also be exchanged with individuals’ relations (Önder & Gümüşkaya, 2011). Under the influence of the information and communication technology revolution, people become acquainted with new ways of life and face countless sources of identity, which has led to the transformation of individuals’ identities, the emergence of multiple cultural identities, changes in value systems, and changes in consumption and lifestyle (Adebi, Yazdkhast & Farahmand, 2008 ).

And the next most referenced code is the regulations

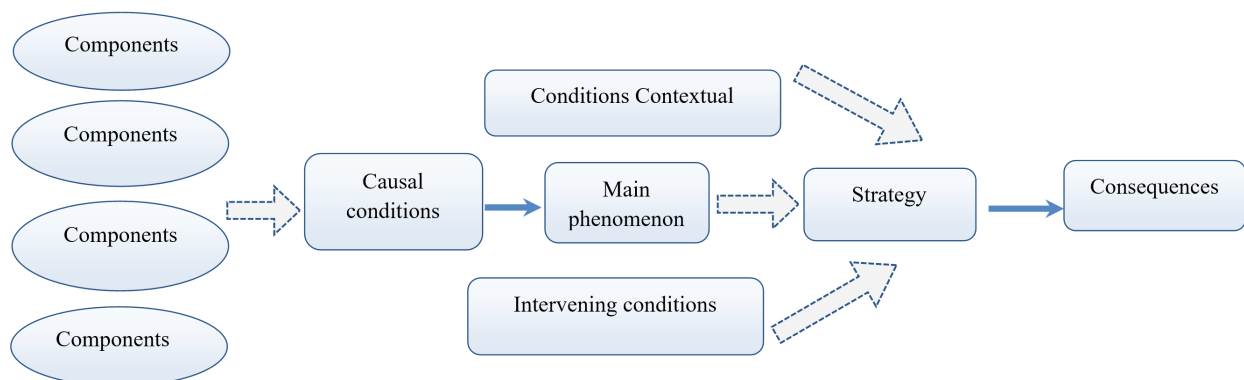


Fig. 2. Axial coding paradigm model. Source: Bazargan, 2010.



Fig. 3. Codes extracted from interviews during axial coding steps .Source: Authors.

of urban planning and architecture. According to the codes, reviewing and approving development plans is: Executive and general regulations of architecture and

urban planning which should be adhered to nationally and issued to provide the grounds of designing legal development of balanced and coordinated fabrics,

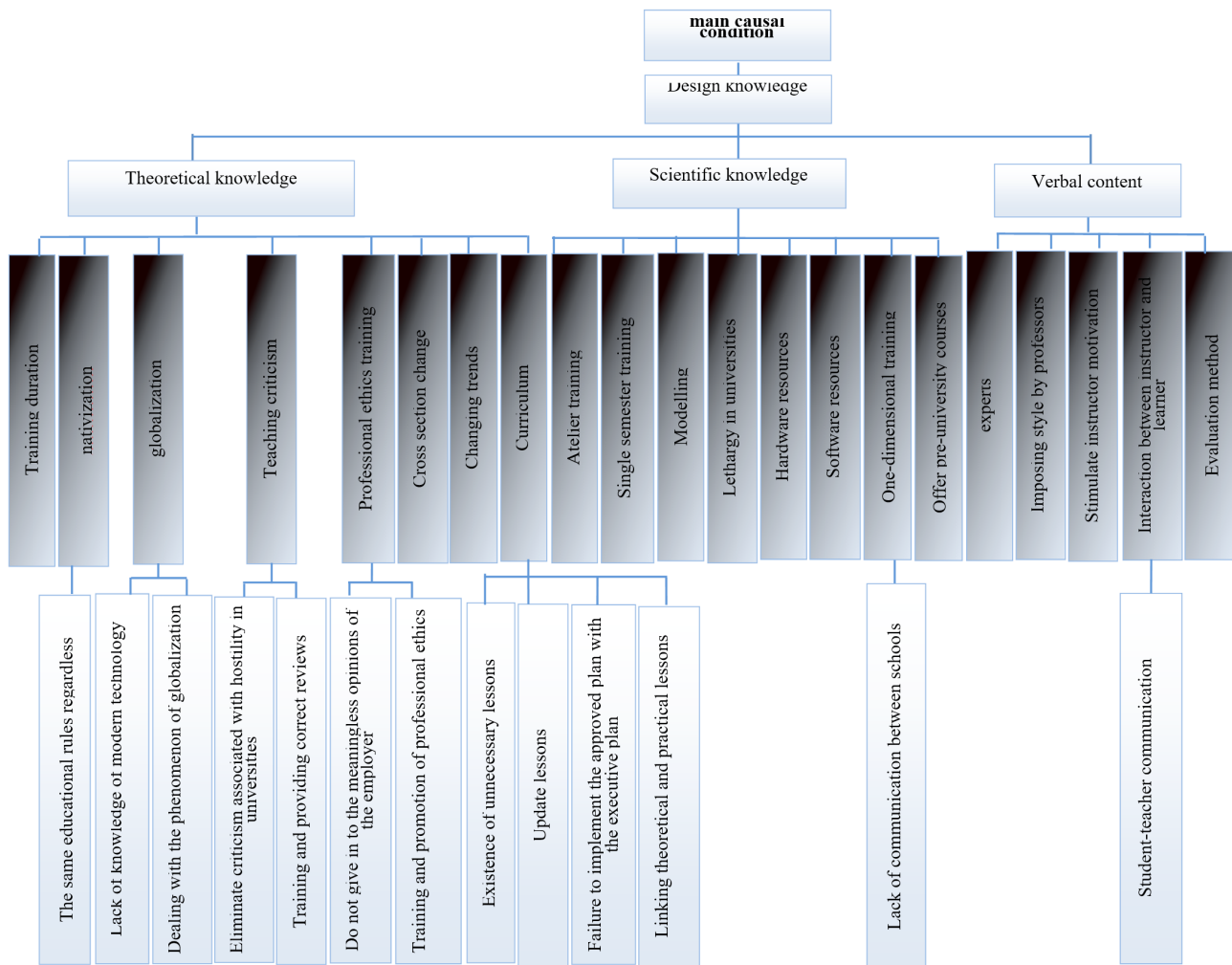


Fig. 4. Causal conditions. Source: Authors.

from large scale to single building. Each of the laws of architecture carries with it a concept by which capabilities have been taken away from or given to the architect's will. These concepts sometimes remain only in the scope of theoretical concepts and sometimes have a direct reference to practical solutions to achieve another concept. The fact that these rules destroy the creativity of architects is mentioned by many educators. Students in colleges also design without any restrictions and then enter the professional labor market and face a world of rules that are sometimes not the right rules, and their educators and professionals in their professional community have no role to play in passing these laws.

#### • Conditions contextual

A review of the codes related to the underlying

factors shows that the three main categories were the effectiveness of education, economics, and non-specialist employers, respectively. The factor that is known as the most influential field factor is education, which despite a few sub-categories, has a considerable frequency. This factor consists of two sub-categories: Lack of proper knowledge of talents and lack of knowledge of the field for architecture learners.

Professional labor market and economics are other underlying factors that create special conditions and restrictions for designers. Analysis of economic codes shows that the favoritism factor (economic and political favoritism) has been the most influential indicator in the set of economic factors. Designers' meritocracy seems to be limited and largely



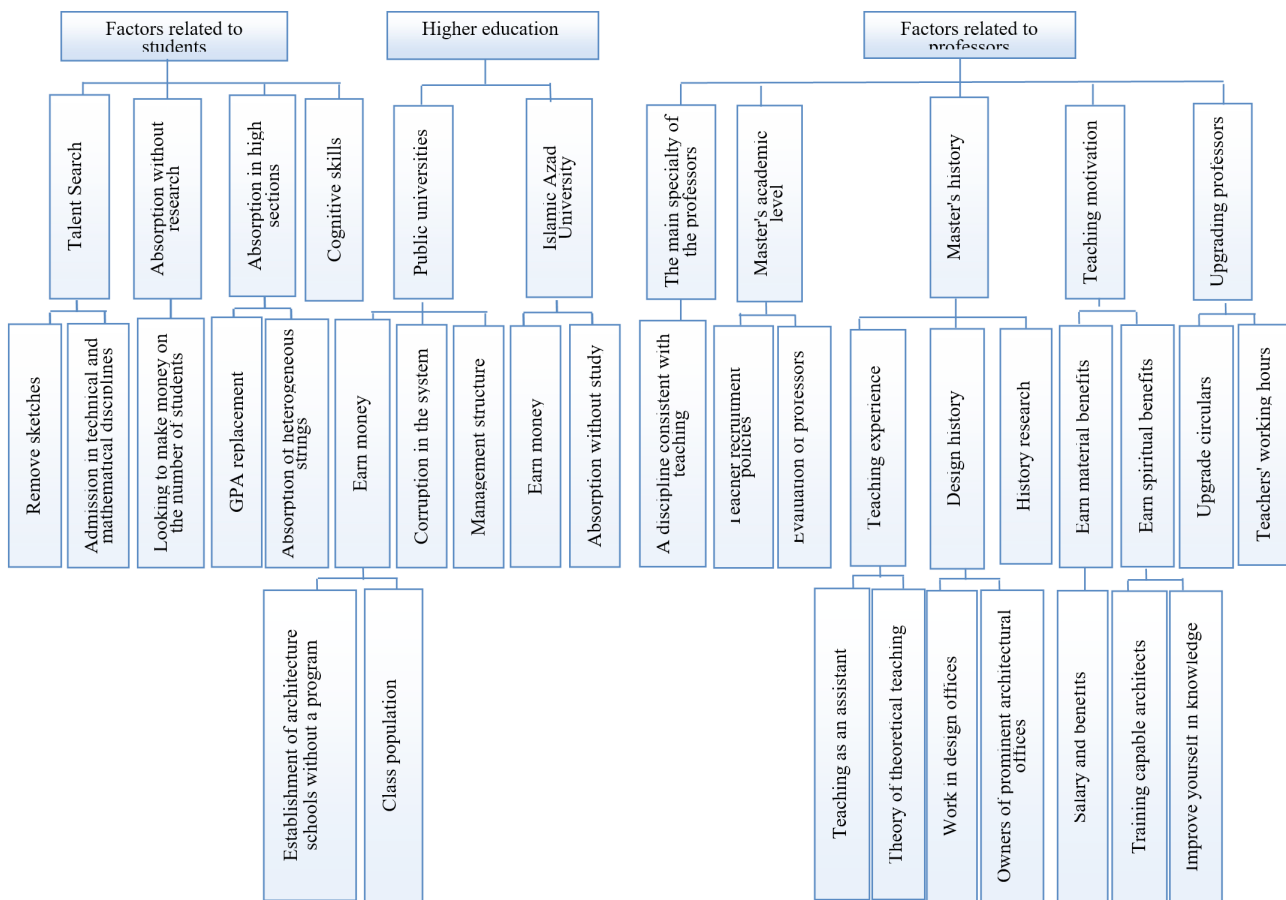


Fig. 5. Diagram of separated causal conditions. Source: Authors.

suppressed; thus, it can be argued that economic factors by the heterogeneous orientation of talents destroy the capacities that have been created for each individual during the training period.

On the other hand, the code of non-specialist employers (The incompatibility of employer culture with the community of architecture and employer education) has been an effective background factor. In producing the product for their profit, the employers have turned to satisfy the general taste of the people, in other words, they are moving in the direction of the market taste. The designers are also subject to the opinions of the employers during the design process. According to the mentioned cases, it can be seen that for various reasons (including an economic view of architecture, irresponsibility, and negligence of some experts in handing over all stages to the employer, etc.), the share of the employer's wants and tastes in the final product is more than normal (Hodjat & Agha Latifi, 2009).

#### • Practical methods (Operations / Interactions)

The main categories related to the interactive factor were lack of theorizing, visual literacy, social capital, and architectural media, respectively; among which it is mostly referred to the theory and architectural media (competition organizing magazines). Theorizing accounts for more than half of the variance of interactive factors; in fact, it seems that architecture education and related intervening and contextual factors have not been able to strengthen the worldview and theorizing in designers; in other words, the output of the faculties has produced learners with an elementary design level, which has continued to have a heterogeneous architectural style. This, in turn, has made it difficult for any individual as a graduate of a college to gradually apply the values and principles they have acquired during their training. The other half of the variance of interactive factors is allocated to architectural media as one of the factors. Architecture magazines and competitions are one of the

resources that are available to learners and professionals every year as a model. Imitation and copies of these magazines are seen immediately after their publication, which shows their impact on these two groups, educators and designers. These magazines (along with the competition) have many opponents who believe that these magazines teach the wrong way to learners and confuse professionals because to win a competition in some magazines, one needs to deal with many ups and downs. Some require designers to meet conditions set by employers. Since the competitions include advertisements (materials, etc.), the authenticity of the competitions is called into question.

### • Consequences

Consequences are the result of interactive factors (Creswell & Poth, 2016). In this study, the consequences are presented in 5 categories. In fact, the interactive factors resulting from the core category of “design knowledge” have had consequences, for example, the interactive factor resulting from non-theorizing is a consequence such as abnormal architecture, and vernacular architecture. Examining the consequential categories according to Fig. 6, it was found that; the factors of unsustainable architecture, popular architecture, abnormal architecture, point architecture, and elimination of the user from the design are the existing consequences, respectively. The output of the main phenomenon, contextual factors, and intervention factors that have made the interactions have finally led to the most challenging result available, namely unsustainable architecture with the highest number of references. In Fig. 6, the paradigm model of the factors affecting the core of the research is plotted. This image is the result of selective coding of interview data with educators studied in this study.

### Discussion

The result of data analysis resulting from axial coding shows that a set of contextual and intervening factors that originate from both extra-university variables and conditions and intra-university variables are introduced as guiding factors in the formation of today’s buildings (Fig. 6). In fact, it seems that architecture education

has little effect on two contextual and intervening factors, and due to its high vulnerability to the smallest background stimuli and fragile interventions, it loses its role in knowledge and skill transfer. The authors extracted two conditional factors (extracurricular and intra-university) from the analysis of the interviews.

The coding analysis of the interviews showed that in the out-of-university section, the interviewees agreed on the role of the media and its impact on all strata of life. In their view, media culture plays a decisive role due to their availability and the time allotted to them. The media have become so intertwined with life in the modern world that they have become an integral part of the cultural fabric in recent years. Issues related to cognition, identity, taste, values, and lifestyle, which are components of culture, are conceptualized and operationalized by individuals through media images. New types of media such as social media, their development in the context of the global Internet, and being multimedia are new dimensions of media. On the one hand, the media affect the community of architects (students, educators, and professionals), and on the other hand, they can play an educational role in educating users (people) and builders, given their availability.

Educators also emphasized the importance of “pre-university education” and public education. On the one hand, general education in this field during pre-university education provides the readiness and possibility of identifying students in this field (which is one of the tasks of education). On the other hand, educating people to transfer their desires and raising their awareness about artistic and architectural values can help them to convey demands to the construction market. Pre-university education will be effective in raising the level of awareness of people, including employers.

Just as a health care system alone is not enough to maintain community health, and students are given health education during their studies, it is essential to have education for urban affairs and architecture, but no “general education in the field of city, architecture, urbanization, and citizenship exists. Based on the extracted codes in the code of the institution of education and upbringing, the lack of attention to recognizing the

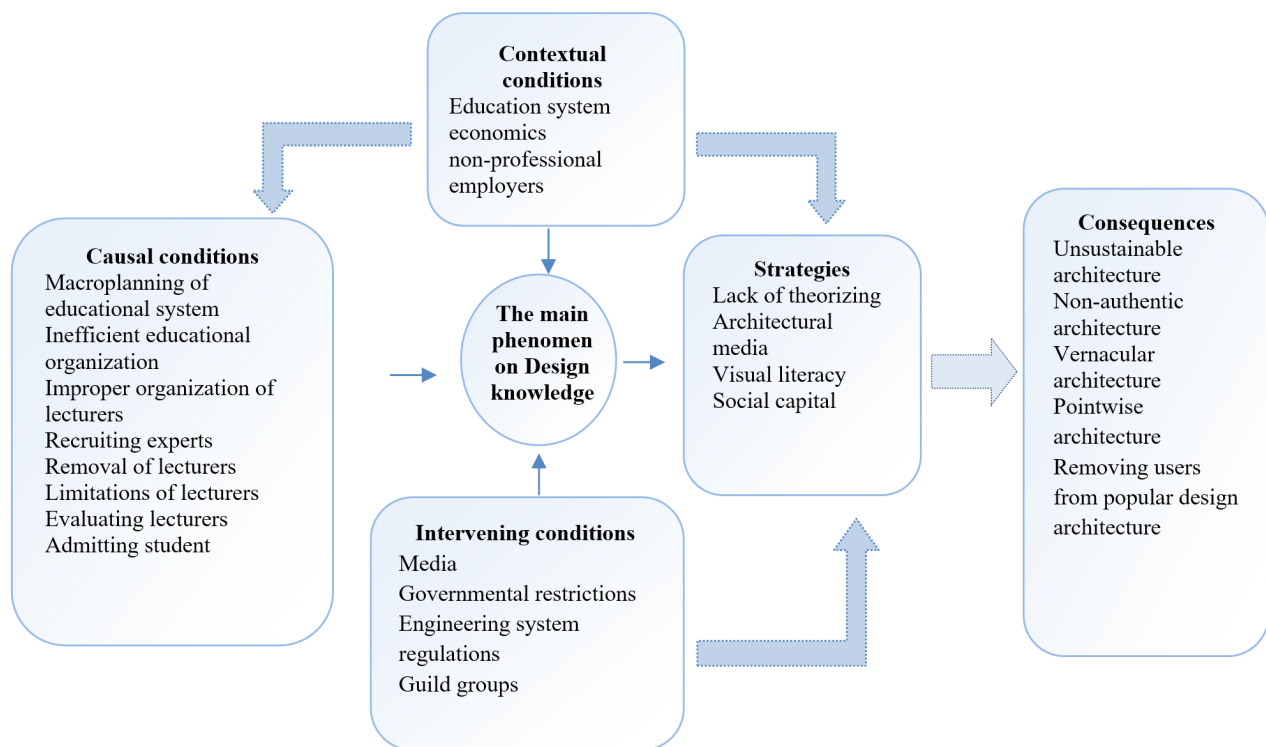


Fig. 6. Paradigm model extracted from the educators' view. Source: Authors.

talent and guiding the learners towards their desired fields and the lack of communication and knowledge of the students with the field of study have caused the most damage to architecture education.

Another factor is the construction organizations and institutions, which are introduced in the form of a paradigm, the institution of education and training, the context, and the institution of the construction market as the intervening factor. In general, it should be said that these factors and the factor of media culture, among the intervening factors, as extra-university factors, have the most codes and even the number of their referrals is significantly more than the factors inside the university. This shows that the head category of “design knowledge” is less effective than the intervening and contextual categories.

The series of codes in construction is known as an interfering factor and consists of two parts, a defect in the regulations of construction and the non-scientific nature of these codes, developed without the supervision of professors and individuals. This factor together with the factors of lack of expertise of employers and economic and political rents has formed the “construction market

institution”. Lack of attention to these two cases has caused architecture graduates to have performed poorly in design and not have the necessary creativity to design or sometimes do not go under the rules of design, which will lead to further problems.

Architecture training, even if it trains professionals, makes people less successful in the construction market. On the other hand, students in colleges design without market restrictions and then enter the professional labor market and face a world of restrictive rules. No. comprehensive system or institution oversees the “compliance” with the demands of the construction and professional market and architectural education. Given the economic power of the construction market institution, this institution practically determines the architectural values. The weakness of the architectural trade unions and the lack of role-making have not made it possible to establish a constructive interaction with the construction market.

## Conclusion

The present study was formed according to the existing needs in the discussion of architectural education as well as the challenges that society faces at the level of

architecture today. During the research, we tried to focus on extracting the events, phenomena, mechanisms, and processes that took place between these two variables. The main point in analyzing the extracted data is that “Iranian architecture education in the current situation, has played a weak role in training designers and the orientation and formation of buildings today.”

According to university professors' views in the faculties of architecture, the extracurricular sector plays a more prominent role. External factors can be expressed in three factors: “Pre-university education”, “media culture” and “manufacturing market institution” (Fig. 7).

This study showed that the “role of factors affecting today's architecture” is affected by both internal and external factors and only education in architecture schools can not be considered as the cause of the current state of architecture today.

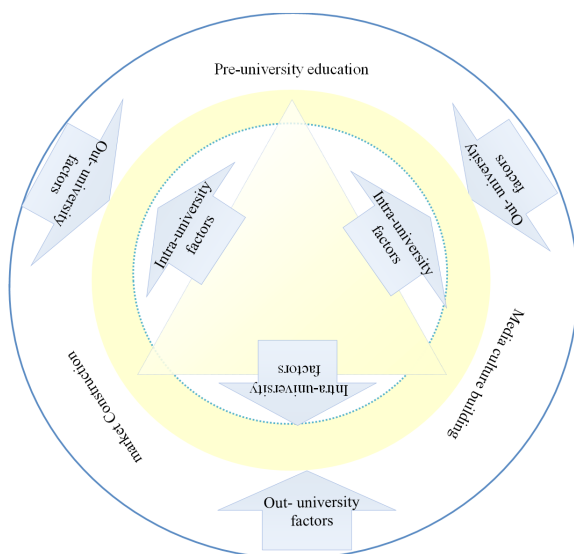


Fig. 7. The categories affecting today's architecture. Source: Authors.

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