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Explaining the main role of behavioral setting in improving the sense of place in academic spaces[1]

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ABSTRACT

Educational spaces like universities, as academic space, are one of the areas of environmental architecture that play a major role in society. As a social institution, these spaces provide cognitive and emotional functions as much as physical functions. The concept of a sense of place in the structure of this psychology determines the quality of the environment. In the meantime, the behavioral settings can be placed in the center of the example of the sense of place due to the creation of a social node. The aim of the current research is to explain the role of behavioral settings in improving the sense of place in the academic spaces such as universities. The current research is of an analytical-interpretive type, which is considered to be developmental in its aim. The method of collecting information is based on the use of documentary methods and the review of books and articles. Based on this, firstly, according to the specified goal, the main concepts were examined and with the method of inductive reasoning as well as content analysis, factors and general indicators influencing the position were extracted. Moreover, with emphasis on repeating the importance of experts and researchers, it was expressed in the form of a conceptual model and, finally, after examining all the criteria of the final research model, it was presented as a result.

Running Title: The role of behavioral setting in improving the sense of place

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[1] This article is taken from the Ph.d. dissertation entitled "Contextualization the role of behaviroal setting in improving the sense of place of academic educational space" Under supervision of Dr. Mohammad Mehdi Soroush and Dr. Heydar Jahanbakhsh advice of Dr. Manouchehr Foroutan at the Islamic Azad University. Hamadan Branch, Iran.

1. INTRODUCTION

The sense of place means people's subjective perception of the environment and their more or less conscious feelings about their environment, which places a person in an internal relationship with the environment. So that the understanding and feeling of the person are connected and integrated with the semantic context of the environment. This feeling is a factor that transforms a space into a place with special sensory and behavioral characteristics for certain people (Falahat, 2015). Educational spaces are one of the areas of environmental architecture that play a major role in society. These spaces, as social institutions, provide cognitive and emotional functions as much as physical functions, and often as a behavioral station, it provides a wide variety of spatial and visual experiences to their audience due to the visibility and enclosure, and multiplicity of the space. The building of educational spaces can be evaluated from various aspects such as functional indicators, spatial feelings, satisfaction level, etc (Falahat, 2006). This spirit of place takes place in a context called "place". A place is a space that has meaning for an individual or a group of people. This definition is expressed as "place = space + meaning" (Giuliani, 2016). Relph states that "place is a combination of place, landscape, ritual, path, other people, personal experience, care and protection". A place can be included home and lands andother places. He believes that the understanding of a place can lead to the revival and maintenance of existing places and the creation of new places (Beswick, 2015). They are specific and distinct (Peterson, 2020). Meanwhile, behavioral settlements can be placed in the center of attention for the example of the sense of place due to the creation of a social node. In other words, behavioral settings include both human and non-human components in a clear spatial and temporal environment, in each of which objects are organized to support fixed behavioral patterns and in certain time intervals. Furthermore, organizing behavioral settings to support special programs including personal opinions and also an interpretation of the social context and rules for conducting behavior is appropriate (Marques et al, 2020). The behavioral setting is an objective unit that is not defined in advance by the researcher but is formed about the environment (Butz and Ripmeester,2014). Behavioral communication is also a type of non-verbal communication that leads to the establishment of communication and the emergence of specific behaviors by organizing physical signs, including fixed, semi-fixed and mobile elements (Brown, 2018). A behavioral setting does not occur in the environment and isolation, but a behavioral system is organized to support activity systems in a society. There is a possibility of the emergence of similar settings in different environments, but the organization of time and their location leads to the expression of different perceptions and different social relationships. The behavioral settings and the program of each of them can be known as a representation of the social and cultural meaning system (Marques et al, 2020). In the meantime, paying attention to the concept of a sense of place is one of the examples in architecture that provides more opportunities for the adaptability of educational theories with physical designs, and it should be taken into account in the development of educational environment design solutions. This experience, together with the qualitative improvement of educational spaces based on the behavioral setting, shows the possibility of examining the type of relationship between humans and the body of the place. Benefiting from this point of view can express the common, clear and specific bodies from the users' point of view, and then use the existing elements and components and design based on those elements.

In a general view, behavioral settings can play a role in the promotion of the qualitative spatial structure. However, these types of nodes are more important in educational spaces because these types of spaces can play a role as the second place of the audience in their lives. The purpose of the current research is to explain the role of behavioral settings in promoting a sense of place in academic spaces such as universities, which are mostly related to questions such as 1- What are the effective mechanisms in determining the role of behavioral settings in promoting the sense of place in academic educational spaces? 2- Do the educational spaces function in an integrated way in creating a sense of place in the minds of the

users? 3- What model can we explain the role of behavioral setting in improving the sense of place of university educational spaces?

2. MATERIALS AND METHODS

Educational spaces and their design are one of the most influential factors in learning. Therefore, the educational environment should be in harmony with the age and level of education of the students (Donnelly, 2017). Sense of place is one of the concepts that can help researchers and planners in various fields and ultimately lead to the development of the environment. The physical characteristics of the environment, which include social interactions as well as the meanings of identity and mentality, influence the induction of a sense of place. Therefore, it is in the mental states and memories of the human being that the feeling towards the place and what is commonly called the feeling of belonging to the place is formed (Brown, 2018).

2.1. Behavioral setting as a psychological environment

Knowledge of environmental psychology is an experimental-acquired science of studying human-environmental relations, which studies human relationships, behaviors and experiences in the environment by gathering knowledge from different fields in a psychological field. Environmental psychology as an interdisciplinary field includes knowledge such as anthropology, sociology and even political science and economics (Mang, 2016). The rapid transformation of the environment is one of the fundamental characteristics of our time. New cities, neighborhoods and buildings are built every day. Such physical settlements impose some behavioral patterns on their residents, new social maps, or some behavioral patterns and standards. They strengthen and weaken others and in short, they give new direction and dimensions to the behavior of their residents (Mortazavi, 2015). In the architecture of educational spaces, it is also necessary to pay attention to the demands and environmental needs of students; Because paying attention to needs is one of the effective educational parameters in modern education (Ghaffari and Omid, 2014).

2.2. Sense of place in behavioral settings

The nature of environmental psychology and its application is a man who transforms the environment according to his needs, values and goals and is reciprocally affected by changing the environment, especially advanced technology causes the intensity and speed of human influence on the environment. Some consider this rapid transformation of the environment to be destructive and cause the dissolution of the ecological system (man-environment) and they emphasize that any kind of fundamental and deep transformation in the natural environment should be done considering its long-term impact on humans and predict its positive and negative results (Mortazavi, 2015). From the phenomenological point of view, the most important related concepts in expressing the sense of place are the words place-friendship, the experience of place, and character of the place, and a sense of place means immaterial characteristics or character of the place, which has a meaning close to the spirit of a place, historically, the spirit of a place is for establishing celebrations and religious ceremonies were used in which the visitors had to pay a lot of attention to the movements of the pilgrims during the ceremony. The feeling of respect is one of the characteristics of the place that distinguishes it from other places (Benitez-Rojo, 2009). Phenomenological experience means mental purification and reaching the essence of things through the manifestation of things through the person, which is effective in the sense of place. This experience is a deep factor that turns any physical and environmental situation into a place. A place is a piece of the environment expressed by the senses, and this sense gives us a better understanding of the nature of the place (Harris, 2017). The character of the place is also one of the most important factors of the sense of place, according to Simon, a place does not only refer to a geographical place but also shows the main character of a site, which differentiates it from other places. In this way, different aspects of the landscape come together in a place to create a distinct environment and a special sense of locality (Seamon, 2019). Therefore, based on the opinions of researchers and experts, a table containing a concavity of opinions can be expressed (Table 1).

Table 1: Statement of criteria for measuring and designing a sense of place from the point of view of experts

Researchers	Year	The proposed criteria related to measuring and creating a sense of place	
Nairn	1965	Experience, human gaze, observer's mind, and intention and culture	
Relph	1976 &2007	Individual and collective values, basic expectations, experiences, human intentions and intentions, a spirit of place, time, social interactions, activities, and interactions between human-place and human-human, stimulating	
Shultz	1981	Events, materials, shapes, colors and textures	
Lynch	1981	Recognizable, memorable and visible	
Steel	1981	Place size, degree of enclosure, contrast, scale, proportion, human scale, distance, texture, color, smell, sound and visual variety	
Panter	1991	Physical structure	Urban landscape, landscape, permeability, building form and urban furniture
		Activity	Uses, foot traffic, rider traffic, behavior patterns, artificial environment and readability
		Semantic	Cultural relations, perceptual functions and qualitative Evaluation
Shamai	1991	People's experience, attitudes, people's behavior and participation	
Zoo	1995	Semantic structures, attitudes, worldviews, individual characteristics and connections of people with place	
Mont Gomer	1998	Vitality and diversity	
Stankovic	1998	Symbolic and emotional concepts	
Cross	2001	The type of relationship with the place (biographical, spiritual, ideological, fictional, desirable and dependent)	
Sircus	2001	Location quality, place stability and reliability	
Bonte	2002	Context, the existence of services and facilities, the place of the place in the urban context, and the way the place is related to the surroundings	
Salvesen	2002	Position, landscape, individual entanglement, physical character, ownership, authenticity	
Pertti	2003	Relationships between people to place and people to people, scale, and physical factors	
Carmona	2007	Management and planning, time	

2.3. Methodology

The current research is of an analytical-interpretive type, which is considered to be developmental in its purpose. In addition to that, it is also considered to be of the fundamental type in examining the basic layers as well as reaching the framework of opinions in conceptual innovation. The collection method is based on the use of documentary methods and the review of texts and articles. Based on this, firstly, according to the specified goal, the main concepts are examined and with the method of inductive reasoning as well as content analysis, factors and general criteria influencing the position are extracted. These criteria are expressed in the form of a conceptual model, taking into account the theoretical framework and emphasizing the repetition of importance by experts and researchers, and finally, after examining all the criteria of the final research model, it is presented as a result.

2.4. Identifying factors affecting the sense of belonging to a place in academic spaces

The university is very important as a space where young people spend one of the most sensitive periods of their lives and are educated to participate in the real affairs of society, and since the design of the environment can have a great impact on the quality of this course (Appadurai, 2018) and (Bohensky and Maru, 2011). It needs to be specially studied. A purely physical look at university spaces, without considering other aspects of human existence, will cause the space to fail to achieve its predetermined goals due to not meeting its needs. The word attachment

to a place refers to the emotional impact of a place that people are attracted to in terms of their senses and culture (Davis, 2009). The sense of belonging to a place is a dimension of the sense of place that forms a positive emotional dependence between a person and a place (Stedman, 2019). This feeling is the result of a positive experience of a place and the result of positive beliefs and feelings that a person has in the process of interacting with the place and giving meaning to it (Marriott and Sam, 2015). Place belonging is a link between a person or a group and a place, which varies based on the spatial level, the degree of specificity, and the social or physical characteristics of the place, and is manifested through feeling, cognition, and psychological-behavioral processes (Scannell, 2020). The sense of belonging to a place is a multidimensional concept that researchers from different fields of sociology, environmental psychology and environmental design have evaluated various aspects of this concept (Mead, 2013) and (Panelli and Tipa, 2017), and the existence of a sense of belonging to the place has been evaluated positively in several ways. Firstly, the feeling of belonging to a place fulfills many spiritual needs of humans (having a sense of security, freedom, privacy, and psychological and physiological comfort), and on the other hand, it improves people's behavior patterns and creates a sense of responsibility, forces people to solve the problems and crises of place and physical space in the studies conducted in Iran, the sense of belonging to the place in the complexes has been able to increase the participation in various social and economic programs and improve the quality of life (Matlabi, 1398).

2.5. The sense of place in behavioral nodes and the internal architecture

What gives soul to a building is its interior space, so it can be said that the way we do our activities has a direct effect on the quality of the interior spaces, and on the other hand, it has an effect on our condition and personality. Based on this, the goal of interior design is to improve the physical and mental performance of the space to make life easier. Some of the internal design criteria are related to the quality characteristics of the environment, which are effective in different learning goals, so the factor of the pleasantness of the environment, security, sense of belonging and semiotics can be stated as the main criteria (Figure 1)
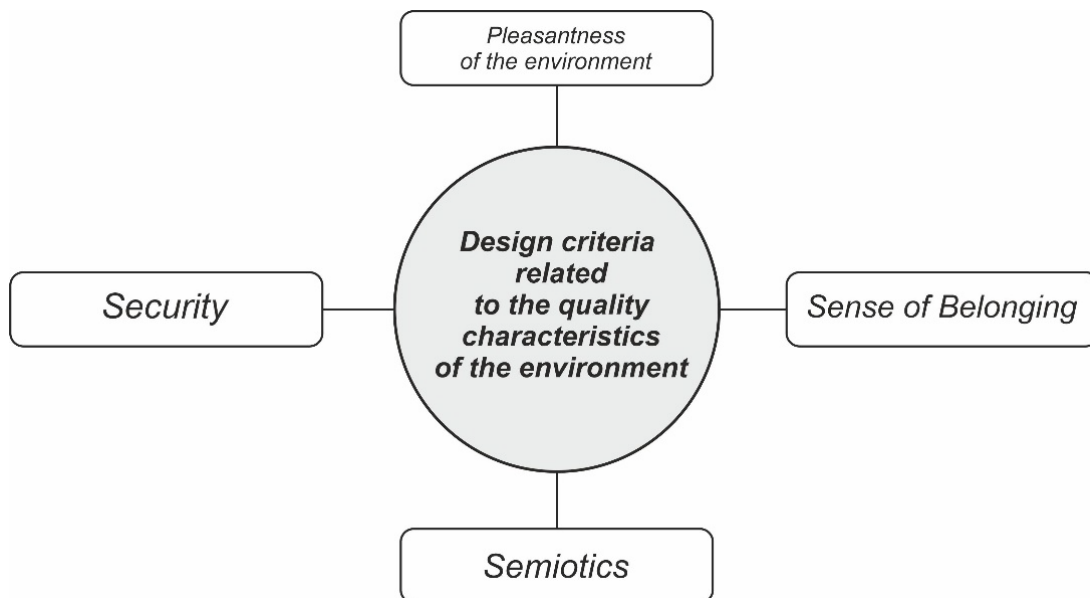

Fig. 1: Design criteria related to the quality characteristics of the environment

3. DISCUSSION AND FINDINGS

In line with the review of architectural theories and approaches about how to increase the sense of belonging to a place in cultural learning spaces to strengthen the role of these spaces in the learning and education of students, some points can be expressed. By improving this feeling, social encounters and interactions between the audience can be increased, which ultimately leads to the improvement of knowledge, skills, and cultural interactions, and also causes the development of the environment and its stability. On the other hand, designers and planners, with a better understanding of the influencing parameters in shaping, in the sense of Charles Jenks, emphasizing the different dimensions of sustainable architecture, state six general principles on sustainable architecture, which are: energy conservation, harmony with the climate, reduction of use from new sources of materials, meeting the needs of residents, coordination with construction, holistic. Every design has basic principles that do not destroy the creativity in the design, but rather free the design from chaos. The most important features that can be considered in the overall structure of educational space are listed below:

– Different organizational patterns and their integration
– Public spaces and communication with the community
– Different spatial areas
– The role of corridors as the route and the organizing core, the emphasis points of the route (beginning and end of the route), spaces adjacent to the route, spaces within the route, and the like
– Outdoor open spaces
– Using the category of spaces and forming adjacent space units, which is especially effective in organizing classes

To implement the principles of sustainable design in an educational space, it is necessary to integrate the concepts of sustainable design with the needs of an educational space to lead to a series of principles to create a valuable architectural space. When "Christopher Alexander," wrote the book "Pattern Language", he introduced a special approach in architecture that was related to people and spaces on the one hand, and on the other hand, he paid attention to the issue of creating the environment and human psychological needs.

Inviting entrance: The main entrance is a very important element in the design of the educational space. Firstly, the entrance should be inviting, welcoming and friendly. Involving the community in schools is a key factor. Therefore, the community should consider the educational space as its own. The entrance to the educational space, while focusing on safety, should also be in balance with the demands and needs of the community.

Transparency: The idea of transparency in the design of the educational space is in line with its visibility in formal and informal areas.

Internal and external perspectives: Since many learning processes take place in closed spaces, it is necessary to open the children's horizons by providing visual lines of sight outside the room as much as possible.

Internal and external communication: Living beings are naturally created in such a way that they need to communicate with the outside world, and this need is especially evident at a young age. Therefore, every opportunity should be used to connect the inside and outside spaces.

Flexible spaces: Creating multi-functional spaces using flexible furniture is one of the easiest ways to separate space.

Daylight and solar energy: Among all the elements that can increase the efficiency of educational space, none is as effective as daylight on the quality of learning. Paying attention to windows, ceiling light, and canopies are therefore important and, in some cases, it is very necessary to pay attention to internal walls and doors to control the amount of light inside.

Natural ventilation: Like natural light, fresh air is also very important in creating a healthy environment.

Natural radiation: one of the most important demands in classrooms is the warming radiation of the sun inside the classrooms instead of fluorescent lights. Although it is common to use lights with the quality of natural light, they cannot replace natural light.

Native index: All schools can have their

mark that makes them special and unique. This privilege can come from the special characteristics of the educational environment. (For example, paying attention to the environment, music, art, technology, etc.)

Communication with the community: There are three general views regarding the relationship between the educational environment and the community:

1- The proximity of the educational space to the heart of the community
2- Close connection with businesses, organizations, entertainment spaces, etc. to develop learning potential
3- Designing the educational space in such a way that it is a place to bring the community together

Bringing everyone together: In the design of a small component, attention should be paid to its relationship with other components, the entire educational space, and the larger community around it.

Learning, scientific, artistic, and life skills workshop: learning art, music, and theater are as effective as learning science in the learning process, while teaching skills needed in life, such as first aid, fire fighting, etc., for children to enter community is essential.

Sports and fitness spaces: Sports and fitness are necessary for children's physical growth and development.

Spaces for using technology: Children use technology to communicate and discover the world, play, create, write and read.

Active and inactive spaces: As much as they need active spaces, children also need spaces for thinking and seclusion.

Using the natural environment in external and internal spaces: Teaching sustainability concepts to children, economic benefits such as reducing energy consumption, reducing waste and saving nature in the long term, changing lifestyles, and finally improving the future environment, increasing children's responsibility towards the environment makes them become environmentalists. Figure 2 shows theoretical modeling based on background and records.

Now, a conceptual framework for designing educational environments can be extracted from the obtained theoretical framework. In this way, since the three levels of macro, medium, and micro scales have a relationship of the whole except and environmental and human factors are two inseparable factors from each other, the shape of the theoretical framework can be generalized as Figure 3.

Therefore, on this basis, the conceptual model can be used as the result of the current research to frame the structure of evaluation methods in case examples.
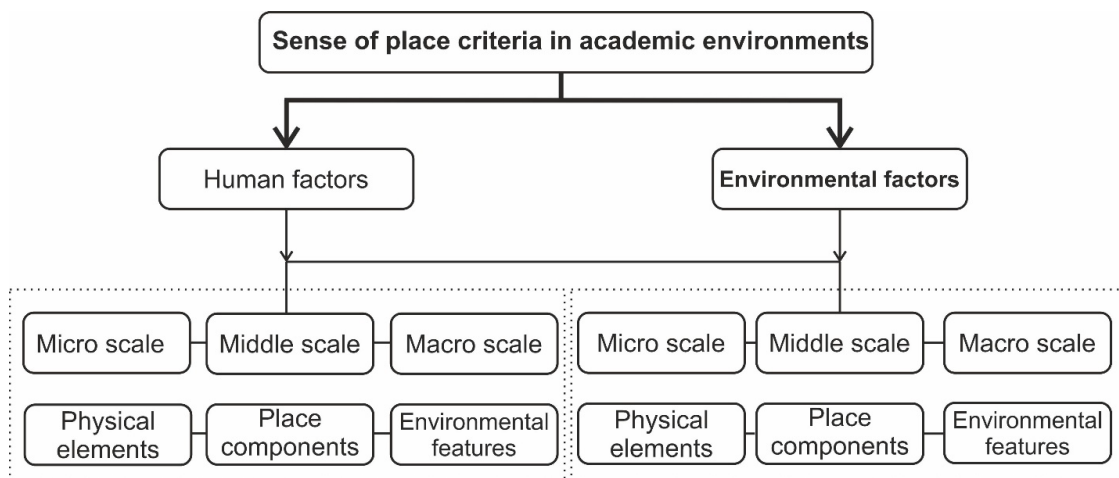

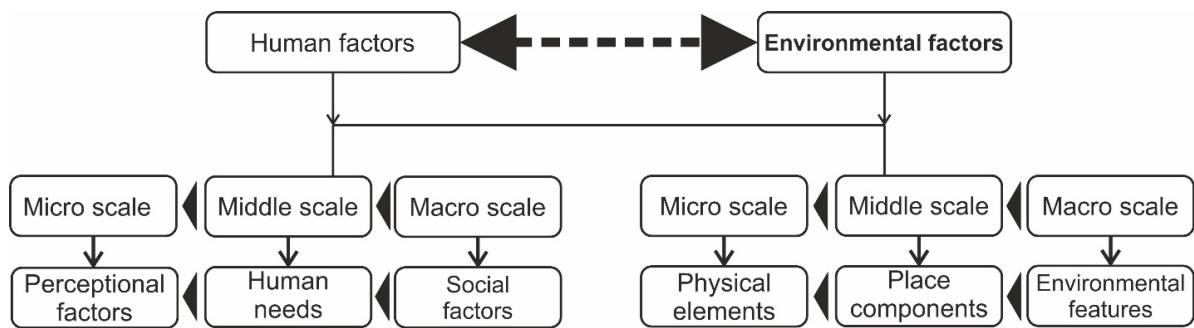Fig. 2: Sense of place criteria in academic environments

Fig. 3: Conceptual framework

4. RESULTS AND CONCLUSION

The causal factors identified in explaining the role of the effective behavioral camp in improving the sense of place of academic educational spaces based on content studies are:

• *Environmental design factors*
• *Human Factors*
• *Social and cultural factors*

And still, the knowledge of behavioral camps in the design of effective behavioral camps in improving the sense of place of academic educational spaces includes the following:

• *Learning environment*
• *Office environment*
• *Free environment*

The components of improving the quality of academic educational centers in the design of an effective behavioral camp in improving the sense of place of academic educational spaces of academic educational spaces are as follows:

• *Features of the space body*
• *Educational tools*

The solutions based on quality improvement in the design of the effective behavioral camp in improving the sense of place of academic educational spaces are as follows:

• *Physical space*
• *Review of other universities around the world*

• *Policies and laws governing the environment*
• *Characteristics of people*

Besides, the mechanisms of setting the behavioral camp in the educational spaces in the design of the effective behavioral camp in improving the sense of place of the academic educational spaces have been as follows:

• *Using the experiences of other environments*
• *Society culture*
• *Environmental component*
• *Visual*
• *Designing*

The methodology process of decision-making, planning, and design in the design of an effective behavioral camp in improving the sense of place in academic educational spaces includes the following:

•*Rational and measurable factors*
•*Psychological factors*
•*Social factors*
•*Cultural factors*
• *Analysis and goal setting*

The physical characteristics of the space in the design of the effective behavioral camp in improving the sense of place of academic educational spaces are as follows:

• *Creativity and flexibility*
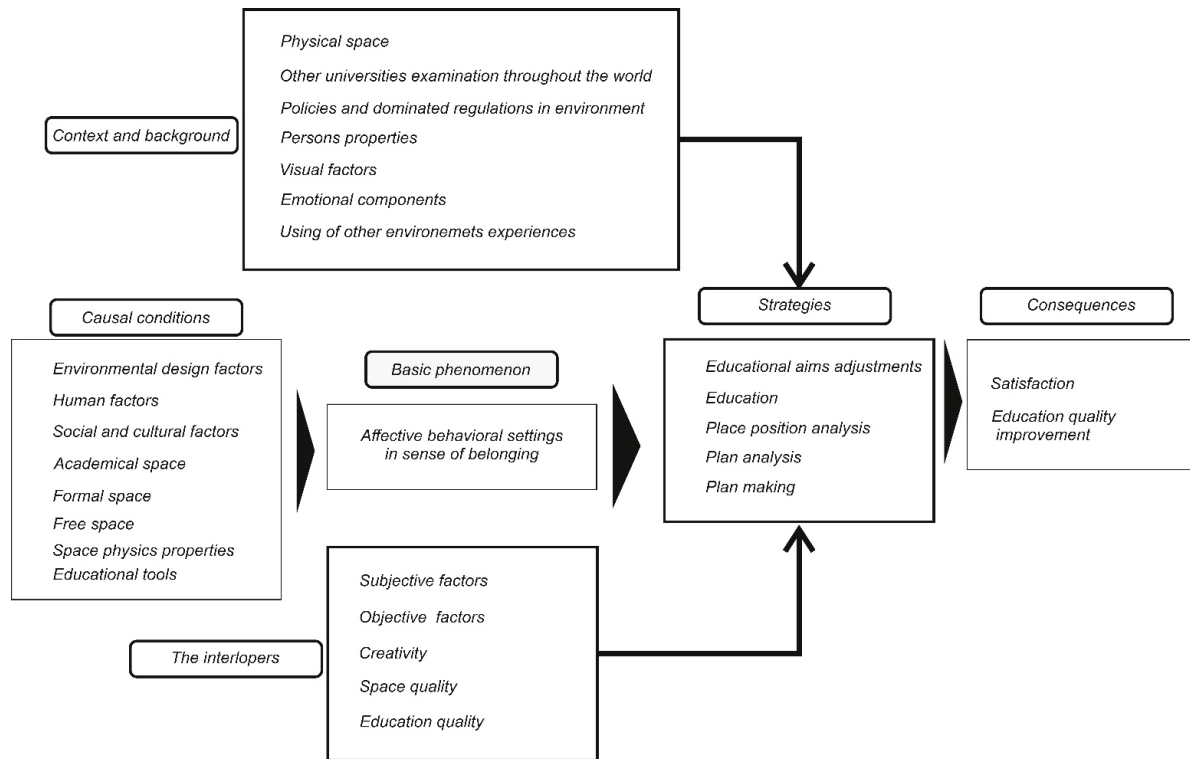• *Quality of space*
• *Quality of education*

Fig. 4: Paradigm final model

The mechanisms of establishing the role of behavioral camp in improving the sense of place in academic educational spaces have been as follows:

- *Setting educational goals*
- *Place-temporal analysis*
- *Analysis and review of plans*
- *Creating a plan*
- *Satisfaction*
- *Increasing the quality of education*

Based on the obtained frequency, increasing the quality of education compared to satisfaction is more important in the context of finding the role of behavioral accommodation in improving the sense of place in university educational spaces Figure 4.

REFERENCES

Appadurai, A. (2018) Modernity At Large: Cultural Dimensions of Globalization; Public Worlds; University of Minnesota Press: Minneapolis, MN, USA, 2018; ISBN 978-1-4529-0006-3.

Benitez-Rojo, A. (2009) The Repeating Island: The Caribbean and the Postmodern Perspective; Post-Contemporary Interventions; Duke University Press: London, UK, 2009; ISBN 978-0-8223-8205-8.

Beswick, K. (2015); Parmar, M.; Sil, E. Towards a Spatial Practice of the Postcolonial City: Introducing the Cultural Producer. Interventions 2015, 17, 789-801. https://doi.org/10.1080/1369801X.2014.998262

Bohensky, E.L.; Maru, Y. (2011). Indigenous Knowledge, Science, and Resilience: What Have We Learned from a Decade of International Literature on "Integration"? Ecol. Soc. 2011, 16, art6. https://doi.org/10.5751/ES-04342-160406

Brown, D. (2018). Contemporary Māori Architecture. In The Handbook of Contemporary Indigenous Architecture; Grant, E., Greenop, K., Refiti, A.L., Glenn, D.J., Eds.; Springer: Singapore, 2018; pp. 107-125. ISBN 978-981-10-6903-1. https://doi.org/10.1007/978-981-10-6904-8_4

Butz, D.; Ripmeester, M. (2014). Finding Space for Resistant Subcultures. Invis. Cult. Electron. J. Vis. Stud. 1999, 2, 1-23. https://doi.org/10.47761/494a02f6.4bfacab8

Davis, C. (2009). Te Matauranga Māori I Te Taha O Te Matauranga. Master's Thesis, Victoria University of

Wellington, Wellington, New Zealand, 1997.

Donnelly, L. (2017) Producing Space and Locality Through Cultural Displays: A Creole Case Study. Space Cult. 2017, 20, 81-93. https://doi.org/10.1177/1206331216643784

Falahat, M.S, (2013), the concept of the sense of place and its shaping factors, the scientific research journal of beautiful arts, number 26, pages 66-57.

Falahat, M.S, (2015). The concept of sense of place and its shaping factors, Fine Arts Journal, No. 26.

Ghafari, Gh. & Omidi, R. (2015). Quality of life index of social development, Tehran: Shirazeh Publishing

Giuliani, M. (2016) Theory of Attachment and Place Attachment. In Psychological Theories for Environmental Issues; Bonnes, M., Lee, T., Eds.; Routledge: Abingdon, UK, 2016; pp. 137-170. ISBN 978-1-351-90790-3.

Harris, M. (2017). Introduction: Ways of knowing. In Ways of Knowing: New Approaches in the Anthropology of Knowledge and Learning; Methodology & History in Anthropology; Harris, M., Ed.; Berghahn Books: Oxford, UK, 2017; pp. 1-26. ISBN 978-1-78920-415-5.

Mang, P. (2016); Haggard, B.; Regenesis. Regenerative Development and Design: A Framework for Evolving Sustainability; Wiley & Sons Ltd: Hoboken, NJ, USA, 2016; ISBN 978-1-118-97286-1. https://doi.org/10.1002/9781119149699

Marques, B.; Freeman, C.; Carter, L.; Pedersen Zari, M. (2020), Sense of Place and Belonging in Developing Culturally Appropriate Therapeutic Environments: A Review. Societies 2020. https://doi.org/10.3390/soc10040083

Marriott, L.; Sim, D. (2015) Indicators of inequality for Maori and Pacific people. J. N. Z. Stud. 2015, 24-50. https://doi.org/10.26686/jnzs.v0i20.3876

Mead, S.M. (2013) Tikanga Māori: Living by Māori Values; Huia Publishers: Wellington, New Zealand, 2013; ISBN 978-1-877283-88-8.

Melabi, Q, (2015), Recognizing the relationship between form and function in architecture, Fine Arts Magazine No. 25,

Mortazavi, Sh. (2011), Environmental Psychology, Shahid Beheshti University Publications, second edition, Tehran.

Panelli, R.; Tipa, G. (2017) Placing Well-Being: A Maori Case Study of Cultural and Environmental Specificity. EcoHealth 2017, 4, 445-460. https://doi.org/10.1007/s10393-007-0133-1

Peterson, N. (2020). Other people's lives: Secular assimilation, culture, and ungovernability. In Culture Crisis: Anthropology and Politics in Aboriginal Australia; Altman, J., Hinkson, M., Eds.; NewSouth Publishing: Sydney, Australia, 2010; pp. 248-258. ISBN 978-1-74224-009-1.

Relph, E. (2018) Place, and Placelessness; Research in Planning and Design; Pion: London, UK, 2018; ISBN 978-0-85086-176-1.

Scannell, L. (2020); Gifford, R. Defining place attachment: A tripartite organizing framework. J. Environ. Psychol. 2020, 30, 1-10. https://doi.org/10.1016/j.jenvp.2009.09.006