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# THE RELATIONSHIP BETWEEN EDUCATIONAL AREA, ARCHITECTURE AND ENVIRONMENT

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#### Abstract

Human needs to be protected from nature and shelter in natural space conditions. Therefore, people need an environment to sustain their lives. Environment; It is divided into two as natural and artificial. The natural environment is the environment in which people and other creatures maintain their relationships and interact with each other. What is done by people who do not form spontaneously is called Artificial Environment. An art branch that designs civil structures to meet people's housing needs is called architecture. But not every design is architecture. In order for a building to be accepted as an architectural product, it is essential to apply the mathematical symmetry called golden ratio throughout the building. The aim of this research is to find the effects of environmental arrangements on the aesthetic, emotional and behavioral outputs of individuals in educational spaces. The importance of this aim is to find the relationship between environment, architecture and education. As a result of the survey conducted in the findings, which locations are liked most are presented in the data analysis. The questionnaire was asked 5 different photographs of the participants in 3 different question titles. As a result of the percentages taken, the participants mostly chose places that are intertwined with nature.

Keywords: Education, environment, architecture, nature.

### Introduction

In this study, to present the relationship between architecture, environment and education as a result of researches. Architecture is a discipline with a wide range of action and the concept of architecture itself contains a very high level of abstraction (Berber 2001; Triadi 2021). In order for a building to be accepted as an architectural product, it is necessary to apply the mathematical symmetry called golden ratio throughout the building (Benyus, 1997). The environment is defined as "all kinds of biotic and abiotic (social, cultural, historical, climatic, physical) factors that affect a living organism or a living community." Environment is an environment that exists with the first creature on earth (Yücel ve Morgil 1998). Education is the job of acquiring, educating and developing knowledge and skills in a particular subject in a specific discipline. Education is a concept that lasts from birth to death, starting from the family, school and afterwards, together with our cultural and social dimensions, in all our lives. In short, we can say "Education is life itself". Facts such as the development of the person, having experience or evolving are the aim of education. If we open it further, it is a process that changes and develops ways of thinking and behavior. Education is an art that brings people better, more beautiful and more useful (Ulusoy 2010). The research was carried out online and as a normal survey. The aim of the research is to find the relationship between architecture, environment and education. For this purpose, answers to the following questions are sought. Individuals of environmental regulations in educational places,

a) What is its effect on aesthetic evaluations?

- b) What is its effect on emotional reactions?
- c) What is its effect on behavioral responses?

#### Methodology

#### **Research Model**

This study was carried out by a quantitative research approach (Bal, 2012). In this approach, scanning model was used. This approach is used to reveal existing information with the help of a questionnaire. In this context, the aim of the research is to find the relationship between architecture, environment and education. (Creswell, 2005). **Participants** 

# The research w

The research was evaluated by conducting a survey. The participants consist of 200 people in total. Participants from Turkey 50 people, 50 people of Cyprus, Nigeria has a total of 200 people, including 50 people of Azerbaijan and 50 people. The survey was carried out in the form of a 5-point scale.

### **Data Collection**

The questionnaire was conducted online. In the questionnaires, 5 different venue photographs were shown to the participants by specifying the venue name but without specifying the location. The first one is university interior garden with plants and sitting places. The second one was an art gallery with plants. Third one is university surrounded by plants and trees. Fourth one is a library again surrounded by trees. The last one is a College with a green area entrance. Questions to collect data was: How much did you like this image: Aesthetic evaluation, Emotional reaction and Spatial behavior to each photo? How would you feel if you were in this place? How long would you like to stay in this place? and Why for each question? The question was asked and answers were received.

### **Data Analysis**

Frequency analysis was applied to the data. The 5 visual and survey frequencies and percentages were calculated and tabulated. Frequency analysis is a statistical analysis technique that shows the frequency of observation and percentage distribution of data (Büyüköztürk, 2017).

#### **Findings and Discussions**

Undoubtedly, man's relationship with the environment he lives in started with human history. Humans' first reactive behavior with the need for shelter. Over time both the environment and human has been both the editor and the user. Human needed a special place "place" to be protected from the effects of has arranged. With this space organized by man nature and its elements constitutes the physical environment. This physical environment, the "social and cultural environment" of man an integral part of his life is the whole. Regarding Human-environment relations the most important thing to be emphasized when it comes to the point is the mutual interaction of human and environment on people, and human activity on the environment, a system of binary interaction. It's a fit and can be described as a regulatory interaction. Lang (1987) coordinates this interaction in the process of human; environment and striving to adapt to environmental conditions, On the other hand, it is a part of nature as giving shape to it with the motive of regulation.

Research findings are given under the headings of aesthetic evaluation, emotional responses and spatial behavior, respectively, considering the stages of the aesthetic

assessment and spatial behavior process in the relationship between education, architecture and environment.

#### Turkey

Aesthetic evaluation asked to the Turks. How much did you like this image? How much did you like this image? The most admired place for the question was the Art Gallery with 24% responding very well to 48 people. The reason is that the environment is remarkable and the greenery is very beautiful. The place, which is less liked compared to the art gallery, has become the University with a rate of 12% by responding very poorly to 6 people. As a result, there were answers such as "The building structure is modern, the classical university, I could not see any design and the garden is large and beautiful because it is green"(Keskin Gündoğdu, 2019).

Emotional Reaction: How would you feel if you were in this place? 27 people answered the question very well and the university interior garden and Gallery was chosen as the best felt place with a rate of 54%. As a result, the answers such as, "An ideal place to spend a good time, a heartwarming and an environment where I can work and rest, greenery is heartwarming". The place chosen by 5 people as I feel bad was answered as a college. As a result, answers such as "It appeals to the eyes, education is good, interior-dependent, and greenery is very low".

Spatial behavior: How much time did you spend in this space? As the place where the participants want to spend the most time to their question, the university interior garden was the place where they wanted to spend the most time, with 23% responding very well. As a result, I replied "I can stay with my friends for a long time, a peaceful environment". The place where they want to spend less time than the inner garden of the university has become the College with 24% of 12 people with a very good response. As a result, the answers were, "I can stay if the interior is nice, as much as normal school time."

#### Turkish Republic of Northern Cyprus (TRNC)

Aesthetic evaluation asked TRNC: How much did you like this image? The most admired place for the question is 30 people, saying it is very good, and the University has been 60%. As a result, the answers were "Live, I wish the campus to be wider, the specific order belongs to a very large area, it is a proof that everyone wants to study, it shows itself tremendously". The less admirable place is 20 people, saying it is very good and it has been the University's internal garden with 40%.

Emotional Reaction: How would you feel if you were in this place? The participants responded to the question that the place where they feel the best is 31 people very well and the University responded with a rate of 62%. As a result, the explanations of "I don't like reading books, being too wide, proof that the goal is high" have come. The place where they want to spend less time has been the University's inner garden.

Spatial behavior: How much time did you spend in this space? As the place where the participants want to spend the most time to their question, 30 people responded very well to the Art Gallery and it was the place they wanted to spend the most time with 60%. As a result, the answers of "No nature, no windows, Peacefulness, Peace of mind" have come.

The place where they want to spend less time has been the inner garden of the University, 8 people say it is very good, compared to 16. "Why is there no nature comes over us, the area is narrow" answers to the question of why?

#### Country-Azerbaijan

Aesthetic evaluation asked Azerbaijan: How much did you like this image? The answer given by the participants to the question is that the place they liked the most was 31 people, and the university was the most liked place with 62%. As a result, the answers were "Because the building structure is modern and large garden, it has a beautiful aesthetic appearance".

The less admired place The College said 22 people very well and became the least admired place with 44 percent. As a result, it is very beautiful due to its architectural structure, it can be preferred for the College, and greenery is low. The answers came.

Emotional Reaction: How would you feel if you were in this place? The place where the participants felt the best was the University with a rate of 60% by responding very well to 30 people. As a result, "I need to see inside to have a good time as it is a large area" answers were given.

Spatial behavior: How much time did you spend in this space? As the place where the participants wanted to spend most of their time, 28 people said it was too much and the University was 56%. As the reason, the answers were "Because I like to study, spend time in campus and building harmonious and busy". The place where they want to spend less time is 11% less and the College has been 22% compared to the place where they want to spend the least time. The answer to the question was, "Because it is comfortable, there is no garden to spend time."

#### Country-Nigeria

Aesthetic Evaluation. How much did you like this image? The answer given by the participants to the question was the most favorite place, 33 people said it was very good, and it was the Art Gallery with a ratio of 66%. As a result, the answers were "A spacious and learning-oriented place". The less admired place is 21% very good, making it the library with 42%. As a result, the answers, "It is a place where you can focus on studying, it sounds big, stifling".

Emotional Reaction: How would you feel if you were in this place? The place where the participants feel the best is the place where 23 people answered very well by saying 46%, and the university interior garden. As a result, "sincere, peaceful, spacious environment" answers were given. The place where they feel bad is 16, saying that it is bad, and the University has become 32%. As a result, the answers of "The outer structure feels scary, its architecture is very lonely".

Spatial behavior: How much time did you spend in this space? As the place where the participants wanted to spend most of their time, the University was the interior of the university, with 22% responding too much. As a result, the answers were, "The longer I stay in a happy environment, the better, naturally, for a long time". The place where they want to spend less time has responded as College, why are the participants saying, "I would like to stay because it is comfortable, elite, and clean. The classic college has responded "foliage nature less".

Turkey-Aesthetic	Turkey-Aesthetic Evaluation: How Much Did You Like This Image?										
Question	Image	Excellent	Good	Average	Poor	Very Poor	Why?				
AESTHETIC EVALUATION. How much did you like this	University interior garden	16person (32%)	23person (46%)	9 person (18%)	2person (4%)	0 person (0%)	an environment where people can communicate, spacious				
image?	Art gallery	24person (48%)	13person (26%)	4 person (8%)	3person (6%)	0 person (0%)	the environment attracts attention, the person draws attention from being here. I like the brightness of the greenness.				

#### Table 1.

Library	14person (28%)	17person (34%)	13person (26%)	3person (6%)	3 person (6%)	It looks big and comprehensive. Quiet and ideal environment.
University	17person (34%)	10person (20%)	13person (26%)	6person (12%)	0 person (0%)	Since the building structure is modern and large garden, its aesthetic view is beautiful.
Collage	17person (34%)	13person (26%)	14person (28%)	4person (8%)	2 person (4%)	the hardware is nice but the outer structure looks weak.

# Table 2.

Turkey-Emotional Reaction: How Would You Feel If You Were In This Place?

Question	Image	Excellent	Good	Average	Poor	Very Poor	Why?
EMOTIONAL REACTION- How would you	University interior garden	27person (54%)	13person (26%)	7 person (14%)	1 person (2%)	2 person (4%)	An ideal place to spend nice time, heartwarming
feel if you were in this place?	Art gallery	27person (54%)	12person (24%)	10person (20%)	1 person (2%)	0 person (%)	an environment where I can work and relax, the greens are heartwarming
	University	18person (36%)	14person (28%)	15person (30%)	2 person (4%)	1 person (2%)	does not look like an exaggerated university, just and stylish
	Library	26person (52%)	18person (36%)	6 person (12%)	0 person (0%)	0 person (0%)	I felt happy because I love books, I felt peaceful.
	Collage	18person (36%)	12person (24%)	15person (30%)	5 person (10%)	0 person (0%)	eyesight, good education very little greenery depending on the location

### Table 3.

Turkey-Spatial Behavior: How Much Time Do You Spend In This Place?

Question	Image	Too much	Much	Little	Very little	Not exactly	Why?
SPATIAL BEHAVIOR- How much time do you spend in	University interior garden	23 person (46%)	19person (38%)	7 person (14%)	0 person (%)	1 person (2%)	I can stay with my friends for a long time. Peaceful environment.
this place?	Art gallery	17 person (34%)	21person (42%)	10 person (20%)	1 person (2%)	1 person (2%)	for a long time because my desire to work increases. I spend a peaceful time.
	University	21 person (42%)	19person (38%)	8 person (16%)	2 person (4%)	0 person (%)	I do not want to stay because of the building. The education is of good quality.

Library	15 person (30%)	19person (38%)	10 person (20%)	5 person (10%)	1 person (2%)	I can stay for a long time because I love books. A bright and spacious environment.
Collage	12 person (24%)	16person (32%)	12 person (24%)	7 person (14%)	3 person (6%)	I can stay if the interior is beautiful.

# Table 4.

Cyprus-Aesthetic Evaluation: How Much Did You Like This Image?

Question	Image	Excellent	Good	Average	Poor	Very poor	Why?
AESTHETIC EVALUATION- How much did you like this image?	University interior garden	20person (40%)	25person (50%)	4 person (8%)	1person (2%)	0 person (0%)	Natural and lively. Students are happy and sharing. Because good, I don't like the fact that people are there, Tree complex, Appearance is beautiful, Personal communication and social assistance and nice environment are available
	Art Gallery	25person (50%)	12person (24%)	10person (20%)	3person (6%)	0 person (0%)	Spacious and peaceful environment. Nestled with nature, I found the ceiling design very creative and it is very nice that the space is spacious and completed with greenery.
	University	26person (52%)	13person (26%)	8 person (16%)	2person (4%)	2 person (4%)	The building feels uneasy as it looks different, it looks like a nice place
	Library	30person (60%)	14person (28%)	6 person (12%)	Operson (0%)	0 person (0%)	Lively, I wish the campus to be wider, the particular order belongs to a very large area, it is a proof that everyone is a university that wants to study, it shows itself tremendously

8	1 1	person 11pe 8%) (22%	rson 1person 5) (2%)	0 person (0%)	It is clean, It looks very purple and beautiful, It did not appeal to my eyes, It is very obvious that it is a college
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### Table 5.

Cyprus-Emotional Reaction: How Would You Feel If You Were In This Place?

Question	Image	Excellent	Good	Average	Poor	Very poor	Why?
EMOTIONAL	University	15person	18person	17person	0person	0person	Lack of lots of
REACTION-	interior	(30%)	(36%)	(34%)	(%)	(%)	space, more than
How would you	garden						one tree would be
feel if you were in							annoying
this place?							moisture in terms
	Art Colory	22 marson	22norson	1 parson	Operson	Operson	of air, Peaceful Since I love the
	Art Galery	23person (46%)	23person (46%)	4 person (8%)	0person (%)	Operson (%)	pictures so much,
		(40%)	(40%)	(870)	(70)	(70)	if you are in
							music, a nice
							place to spend
							time in relaxation
	University	31person	10person	5 person	4person	0person	I don't like
		(62%)	(20%)	(10%)	(8%)	(0%)	reading books, It
							is very wide,
							Proof that the goal
							is kept high
	Library	28person	15person	6 person	1person	0 kişi (0%)	I got tired of the
		(56%)	(30%)	(12%)	(2%)		schools, the
							campus being
							wider felt better,
	Culler	10	10	10	2	a	Нарру
	Collage	19person	12person	10person	3person	6kişi	Good, symbolizes
		(38%)	(24%)	(20%)	(6%)	(12%)	the goal, could
							have been more beautiful
							Deautiful

### Table 6.

Cyprus-Spatial Behavior- How Much Time Do You Spend In This Place?

Question	Image	Too much	Much	Little	Very little	Not exactly	Why?
SPATIAL BEHAVIOR- How much time do you spend in this	University interior garden	8 person (16%)	9 person (18%)	22person (44%)	9person (18%)	2 person (4%)	No nature comes over us, the space is narrow, I had friends
place?	Art Galery	30 person (60%)	9 person (18%)	6 person (12%)	2person (4%)	3 person (6%)	No nature, no window, Peaceful, Peace of mind
	University	15 person (30%)	15 person (30%)	15person (30%)	2person (4%)	3 person (6%)	Low campus area, for visiting purposes
	Library	20 person (40%)	4 person (8%)	6 person (12%)	1 kişi (2%)	19person (38%)	I love spending time with books, Exam time,

						Building is
						spooky,
						Mysterious, I
						felt uneasy
Collage	6 person	3 person	11person	20person	10person	The visit is
	(12%)	(6%)	(22%)	(40%)	(20%)	boring, even if I
						don't have to.

### Table 7.

Azerbaijan-Aesthetic Evaluation: How Much Did You Like This Image?

Question	Image	Too much	Much	Little	Very little	Not exactly	Why?
Aesthetic Evaluation- How much did you	University interior garden	25 person (50%)	20person (40%)	3person (6%)	2person (4%)	0 person (0%)	Since the green area is very large, the sitting area is small, but spacious
like this image?	Art Gallery	25person (50%)	13person (26%)	9 person (18%)	3 person (6%)	0 person (0%)	Ceiling structure is very beautiful, I would prefer it to be more lively, as if it was a little dark
	Library	22person (44%)	12person (24%)	11person (22%)	3 person (6%)	2 person (4%)	The image of the building is different and heartwarming, the image of the building looks strange, pale
	University	31person (62%)	13person (26%)	бреrson (12%)	0 person (0%)	0 person (0%)	Since the building structure is modern and large garden, its aesthetic view is beautiful.
	College	22person (44%)	12person (24%)	14person (28%)	1 person (2%)	1 person (2%)	It is very beautiful with its architectural structure, it can be preferred for college, and greenery is low.

## Table 8.

Azerbaijan-Emotional Reaction: How Would You Feel If You Were In This Place?

Question	Image	Too much	Much	Little	Very Little	Not exactly	Why?
EMOTIONAL REACTION: How would	University interior garden	23person (46%)	18person (36%)	8person (16%)	1person (2%)	0 person (0%)	An ideal place to spend nice time, peaceful
you feel if you were in this place?	Art Gallery	25person (50%)	15 person (30%)	9person (18%)	1 person (2%)	0 person (0%)	I love the pictures so much, ,a nice place to spend time
	University	30person (60%)	18person (36%)	5person (10%)	0 person (0%)	0 person (0%)	Since it is a large area, I need to see it inside to have a good time as an external appearance.

Library	20person (40%)	11 person (22%)	14person (28%)	4 person (8%)	1 person (2%)	Since it is a place where I will get information, the building is horrible, there is no reason
College	19person (38%)	15 person (30%)	13person (26%)	3 person (6%)	0 person (0%)	

## Table 9.

Azerbaijan-Spatial Behavior: How Much Time Did You Spend In This Place?

Question	Image	Too Much	Much	Little	Very Little	Not exactly	Why?
SPATIAL BEHAVIOR: How much time did you spend in this place?	University interior garden	19person (38%)	20 person (40%)	9person (18%)	1person (2%)	1person (2%)	Suitable for outdoor and green lessons, nice to have a good time with friends
	Art Gallery	17person (34%)	23person (46%)	8person (16%)	1person (2%)	1person (2%)	I would love to watch the pictures carefully, peaceful
	University	28person (56%)	16person (32%)	4person (8%)	2person (4%)	Operson (%)	I like to study, campus and building are compatible, I would like to spend time
	Library	18person (34%)	16 person (46%)	11person (22%)	4 person (8%)	1person (2%)	I think it would be enjoyable to read books in this magical place, I do not prefer it because of the building, Scary
	College	18person (36%)	16person (32%)	11person (22%)	4person (8%)	1person (2%)	Comfortable, no garden to spend time

### Table 10.

Nigeria-Aesthetic Evaluation: How Much Did You Like This Image?

Question	Image	Too Much	Much	Little	Very Little	Not exactly	Why?
AESTHETIC EVALUATIO N- How much did you like this image?	University interior garden	27person (54%)	17 person (34%)	3 person (6%)	3person (6%)	0 person	Since the green area is very much, there is a peaceful environment between the classes.

Art Gallery	33person (66%)	10person (20%)	5person (10%)	2 person (4%)	Operson	Spacious and learning- oriented place, not realistic
Library	21person (42%)	12person (24%)	9person (18%)	6 person (12%)	2person (4%)	An environment that can focus on studying, it looks big, stifling
University	26person (52%)	13person (26%)	4person (8%)	3person (6%)	2person (4%)	Large garden, modern structure, very lonely as a structure
College	23person (46%)	12person (24%)	8person (16%)	3person (6%)	4person (8%)	A classic college looks modern, vegetation is scarce

### Table 11.

Nigeria-Emotional Reaction: How Would You Feel If You Were In This Place?

Question	Image	Too Much	Much	Little	Very Little	Not exactly	Why?
EMOTIONAL REACTION: How would you feel if you were in this place?	University interior garden	23person (46%)	16person (32%)	10person (20%)	1 person (2%)	0 person (%)	sincere, peaceful, spacious environment
-	Art Gallery	22person (44%)	19 person (38%)	7person (14%)	2 person (4%)	0 person (%)	I don't think it is dim light, it is refreshing, relaxing
	University	12person (24%)	14person (28%)	5person (10%)	16person (32%)	0 person (0%)	its outer structure feels scary, its architecture is very lonely
	Library	21person (42%)	13person (26%)	9person (18%)	4person (8%)	3person (6%)	Plenty of books, peaceful, stifling building
	College	20person (40%)	17 person (34%)	12person (24%)	1person (2%)	0person (0%)	I felt the outdoor beautiful, boring, bad

### Table 12.

Nigeria-Spatial Behavior: How Much Time Did You Spend In This Place?

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Question	Image	Too Much	Much	Little	Very Little	Not exactly	Why?	_
SPATIAL	University	21person	19 person	8person	1person	1person	the better I	
BEHAVIOR:	interior	(42%)	(38%)	(16%)	(2%)	(2%)	stay in a	5
How much	garden						happy	
time did you							environment,	20
							the longer it is	_ ò

spend in this place?							natural, so I stay for a long time
	Art Galerry	18person (36%)	21person (42%)	7person (14%)	3person (6%)	1person (2%)	for a long time, until I'm done
	Library	19person (38%)	16person (32%)	10person (20%)	4person (8%)	1person (2%)	I would like to spend a long time, with plenty of books until I study
	Universty	20person (40%)	15person (30%)	9person (18%)	6person (4%)	Operson (%)	I would like to stay training, I would like to stay shortly because it looks stifling
	College	18person (36%)	24person (48%)	7person (14%)	1person (2%)	Operson (%)	I want to stay because it is comfortable, elite, clean. Classic college, greenery nature less

### Conclusion

Aesthetic values are subjective in nature. Aesthetic tastes also differ in different periods, and an aesthetic asset / formation / element does not have the same quality in another period. However, understanding the cultural features created by the social structures in different time sections and the associated aesthetic feelings and space qualities will be a guide in creating today's environments. It is possible for societies / individuals to live healthy, happy and enjoyable with the formation of visually qualified, well-resolved, functional, aesthetic environments due to environmental conditions. Therefore, the place that the participants liked the most, felt good and wanted to spend time was mostly Art Gallery, University interior garden and University. College was the place where they liked less and wanted to spend less time. When we look at the results of the survey, the place that the participants like and the place where they feel better and where they want to spend more time are generally educational spaces that are intertwined with nature. It plays an important role in architecture and education as well as in an important place in our nature life. When we look at the places where they want to spend less time, they like less and do not feel well, these are educational places where there is not any nature where there is little greenery. As a result of the survey, the relationship between education area, architecture and environment has been reflected as nature. Because the survey is a survey with visual content, and each of the visuals in this survey are visuals that reflect education, architecture and the environment. The most chosen of these images are the fields of education intertwined with nature.

#### Suggestions

Nature is always important to us. After the results of the survey, it is the work of us architects and interior designers to design places where they can be more comfortable in order to attract our children and young people to education. When designing any space or building, we should always attach importance to its nature. The unhappiness of the students

who are educated in the concrete structures is actually quite clear from the results of this survey. That is why, instead of making concrete education areas, building structures that are intertwined with nature will be a useful decision for both our health and quality education.

### References

- Aydınlı, S. (1986). Mekânsal Değerlendirmede Algısal Yargılara Dayalı Bir Model, İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Yayınlanmamış Doktora Tezi, İstanbul.
- Bal, H. (2012). *Bilimsel Araştırma Yöntemleri, Nicel Araştırma Yöntemi*. Fakülte Kitabevi Yayınları.
- Benyus, J. (1997). Biomimicry: Innovation Inspired by Nature, New York: Harper Collins Publishers.

Büyüköztürk, Ş. (2017). Veri Analizi el Kitabı, 25. Baskı. Pegem Akademi Yayınları.

- Creswell, J. W. (2005). Educational research: Planning, conducting, and evaluating quantiative and qualitative research. Ohio: Pearson Education, Inc.
- Hou, Li, Kang, J. A. & Xu, Y. (2022). A Study on the Influence of Human Cultural Environment on Literary Creation from the Perspective of Eco-criticism. Advances in Social Science, Education and Humanities Research, 635, 69-75.
- Keskin, T., Deniz, İ., Arıç, A., Yılmazsoy, B.T., Andiç-Çakır, Erdoğan, A., Altun, D. Tokuç, A., Demirci, B.F., Şendemir Ürkmez, A., Köktürk, G., & Özkaban, F. (2019).
  Development of Ecological Biodesign Products by Bacterial Biocalcification, *EJENS*. 3(1), 17-25.
- Koramaz, E. K. (2014). Aesthetic Evaluation And Spatial Behavior In Urban Environment. *Journal of Science*. 13(26).
- Lang, J. (1987). "Fundamental Processes of Human Behaviour", Creating architectural Theory, The Role of the Behavioural Science Environmantal Design, Van Nostrand Reinhold.
- Triadi, A. R. (2021). Eco-Architecture Concept Tourism Information Center Borobudur Highland Building. *Sciendo*.
- Yücel, A. S. & Morgil, F. İ. (1998). Investigation of Environmental Case In Higher Education. Hacettepe University Faculty of Education Journal, (14), 84-91.