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About

The purpose of **IDA: International Design and Art Journal,** which started its publication life in 2019, is to ensure that scientific, original and academic studies are evaluated under scientific ethical rules and conveyed to the reader in a qualified environment. Within the scope of the journal, all interdisciplinary articles on design and art fields and related to these subjects can be sent for evaluation. **IDA: International Journal of Design and Art** is an international refereed journal.

Our journal publishes 2 issues per year and the language of the journal is English and Turkish. The blind-review system is used in the evaluation process, for further information please look at the "Evaluation Process". Article submitted for publication in the **IDA: International Design and Art Journal** should not be published elsewhere or waiting in line for publication. The author (s) agree to transfer the publication and copyright of the articles they submit for publication to **IDA: International Design and Art Journal,** and do not charge ant fees. All published articles are open to everyone with reference to journals and authors.

Hakkında

Yayın hayatına 2019 yılında başlayan **IDA: International Design and Art Journal** amacı, bilimsel, özgün ve akademik çalışmaların bilimsel etik kurallara uygun bir biçimde değerlendirilmesini ve nitelikli bir ortamda okuyucuya iletilmesini sağlamaktır. Dergi kapsamında, tasarım ve sanat konularıyla ve bu konular bağlamında yapılmış olan disiplinlerarası tüm makaleler değerlendirilmek üzere gönderilebilmektedir. **IDA: International Design and Art Journal** uluslararası hakemli bir dergidir.

Dergimiz yılda 2 sayı yayınlamaktadır ve derginin dili İngilizce ve Türkçe'dir. Dergimizde kör hakemlik sistemi uygulanmaktadır, değerlendirme süreci ile ilgili detaylı bilgiler "Değerlendirme Süreci" başlığında bulunmaktadır. **IDA: International Design and Art Journal**'a yayınlanmak üzere gönderilmiş olan makalelerin başka bir yerde yayınlanmış ya da yayın için sırada bekliyor olmaması gerekmektedir. Yazar/yazarlar yayınlanmak üzere gönderdikleri makalelerin yayın ve telif hakkını **IDA: International Design and Art Journal**'a devretmeyi ve ücret talep etmemeyi kabul eder. Yayınlanmış tüm makaleler dergi ve yazarlara atıf yapılmak suretiyle herkese açıktır.

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Preface

Dear Readers,

We are pleased to announce that our journal, which we have set as our primary goal to contribute to academia and science in the fields of design and art since 2019, continues to be included in national and international university databases and leading indexes with our hard work and your support. We continue to achieve the goals of **IDA: International Design and Art Journal**, which we established on a voluntary basis, to evaluate scientific, original, and academic studies in accordance with ethical rules and to convey them to the reader, and we are happy to announce our seventh issue as of December 2022.

As the IDA Journal family, we are grateful to our esteemed Editorial and Advisory Board for supporting us during the preparation for publication and all evaluation processes and to the authors who contributed to the fifth issue with their work. Also, I would like to thank the Section Editors and Reviewer Board, who are a part of our increasing family and contributing to the evaluation process. Finally, I also want to thank our Language Editors, Assistant Editors, and Technical Support Team for their contributions.

Editor-in-Chief
Assoc. Prof. Nilay ÖZSAVAŞ ULUÇAY

Önsöz

Değerli Okuyucular,

2019 yılından beri tasarım ve sanat alanlarında akademiye ve bilime katkı sağlamayı birincil hedef olarak belirlediğimiz dergimizin, yoğun çalışmalarımız ve desteklerinizle ulusal ve uluslararası üniversite veri tabanlarında ve öncü indekslerde yer almaya devam ettiğini duyurmaktan mutluluk duyarız. Gönüllülük esasına dayalı olarak kurduğumuz **IDA: International Design and Art Journal** bilimsel, özgün, akademik çalışmaların etik kurallara uygun bir biçimde değerlendirilmesi ve okuyucuya iletilmesi hedeflerini başarıya ulaştırmaya devam etmekteyiz ve Aralık 2022 itibari ile yedinci sayımızı yayınlamış olmanın mutluluğunu yaşıyoruz.

Yayına hazırlık ve tüm değerlendirme süreçlerinde desteklerini esirgemeyen değerli Yayın ve Danışma Kurulumuza ve çalışmaları ile dergimiz yedinci sayısına katkı sağlayan yazarlara IDA Journal ailesi olarak minnettarız. Hazırlık aşamasında bizlere yardımcı olan ve her gün artarak çoğalan ailemizin birer parçası olan Alan Editörü ve Hakem Kurulumuza, Dil Editörlerimiz, Yardımcı Editörlerimiz ve Teknik Destek Ekibimize katkılarından dolayı teşekkürlerimi sunarım.

Baş Editör
Doç. Nilay ÖZSAVAŞ ULUÇAY

Research Article

Mimarlığı makrodan mikroya doğru bir kavrayışla düşünme

Thinking architecture through a macro-to-micro understanding

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**This study is prepared from an ongoing PhD thesis in the Architectural Design PhD Program at ITU Graduate School.

Özet

Mimarlığı yeniden düşünmeye dair toplumsallık eleştirileri 2000'li yıllarda alan içerisinde görünür olmuştur. Faillik kavramının söz konusu eleştirilerde öne çıkışı, mimarlıktan toplumbilimine uzanan güncel bir açılım olarak değerlendirilebilmektedir. Çalışma, dile getirilen disiplinlerarası açılımı tamamlayıcı bir çift yönlülük sağlamayı amaçlamakta ve bakış yönünü tersine çevirerek "toplum bilimsel bir perspektiften mimarlığa nasıl yaklaşılabilir?" sorusunu sormaktadır. Faillik bu yön için de kavramsal bir zemin olarak görülüp ilgili toplum bilimsel literatürde incelenmektedir. Böylelikle, varılan düaliteler sorunsalına ilişkin makro/mikro, yapı/faillik düşüncelere dayalı teorik-eleştirel bir çerçeve oluşturularak mimarlığın toplumsallığına odaklanılmaktadır. Çalışmada düaliteleri aşmaya yönelik iki tür toplumsal çözümleme yaklaşımı ileri sürülmekte ve bu doğrultuda nitel araştırma izlenerek metin analizi yöntemi kullanılmaktadır. Metinsel veriler, toplumbilimi ile bağlantılı düşünürlerin mimarlığa değindiği yazılardan derlenmektedir. Bunun üzerine, araştırma önce mimarlığın makro bir yapı olarak kavranışını ortaya koymakta ve ardından bu kavrayışın çözünmesinde mimarlık pratiğini yorumlayarak tartışmaktadır. Çalışma; mimarlığın makro olgular karşısındaki yeterliğini sorgulayan eleştirel eşiğin ötesine geçen ve ona çeşitli faillikler, ilişkiler ağı olarak yaklaşan disiplinler arası bir bakış açısı geliştirmekte ve böylelikle güncel eleştiri alanına düşünsel bir katkıda bulunmaktadır.

Anahtar Kelimeler: Mimarlık Pratiği, Toplumsal, Mikro/Makro, Faillik/Yapı

Abstract

Social architecture debates on rethinking architecture has come to the fore within the field during the 2000s. The prominence of the notion of agency in these criticisms can be seen as a current expansion from architecture to sociology. The study aims to provide a complementary two-way view to this interdisciplinary expansion by looking into the reverse direction and asks: In what way architecture can be approached from a sociological standpoint? For this, agency is treated as a conceptual ground and investigated in the relevant sociological literature. Then, a theoretical-critical framework is formed based on macro/micro, structure/agency notions pertinent to duality problematic. A particular two-fold classification regarding social analyses proposing to overcome dualities is derived. Following a qualitative research approach, text analysis method is adopted. Textual data is compiled from writings of thinkers regarding sociology which deal with architecture. The research, first, scrutinizes the understanding of architecture as a macro structure; and then, within its dissolution, interprets architectural practice. The study advances an interdisciplinary perspective approaching architecture as a network of diverse agencies and relations, which goes beyond questioning inadequacy of architecture against macro level facts and issues. Thus, it makes a theoretical contribution to current criticisms of architectural field.

Keywords: Architectural Practice, Social, Micro/Macro, Agency/Structure

Extended Abstract

Introduction: Social architecture debates in literature deal with the conditions of the architectural subject/producer, architectural object/product or the production process. These kind of discussions come to the fore in a more prominent way in some periods. It may become prominent when updating the discussions depending on the crisis periods and paradigmatic shifts specific to architecture or when debating new interdisciplinary local and global current theories and facts. For instance, as an extension of the criticisms that evaluated the 20th century through the problematization of Modernism, Industrialization and the shift in the social role of the architect; the debates in the 2000s appear with the pre-emphasis *re-* such as redefining, rethinking, and rediscovering architecture and its practice. The critical potential of architecture is questioned along with new conditions such as global economic reconstruction, the rising information society based on networks-simultaneity-multiplicity-nonlinearity in these criticisms. The notion of agency comes to the fore in current debates for understanding the ways of how architecture is connected with these emergent world developments. At the same time, in an interdisciplinary view, the prominence of the notion of agency can be seen as a current expansion from architecture to sociology. So, this study treats agency as a conceptual ground and through investigating this notion in the relevant sociological literature it focuses on reconsidering architecture in the social context. By this way, it interprets architectural practice and design thought through a perspective dissolving from macro to micro understanding.

Purpose and scope: As it is revealed by the literature research, architecture may expand to sociology by utilizing the notions of this field for comprehending the social. The study aims to provide a complementary two-way view to this interdisciplinary expansion by looking in the reverse direction and asking: In what way architecture can be approached from a sociological standpoint? Thus, through the relevant sociological literature, macro/micro and structure/agency notions pertinent to the duality problem become instrumental for forming a theoretical-critical framework in order to reconsider architecture in the social context. Within the scope of the study, an interpretive perspective is developed in which the practice is centered as a potential process instead of the dual ideas such as architecture and society or architect-as-subject and architectural-object. Criticizing sociology-related discourses on architecture makes possible research in this scope since it both intersects with architecture and also looks into architecture from an outside position.

Method: In this study, firstly, a particular two-fold classification regarding social analyses proposing to overcome dualities is derived by means of literature research. The first one develops or traces a macro-micro-connected social analysis approach to overcome dualities. The second one does not follow a level-categorizing approach for social analysis. The attitudinal difference between the two approaches can be summarized as focusing on the relations between the levels by not choosing a side, or focusing directly on practice and process instead of assuming the levels. And then, in order to form a theoretical-critical framework through in-depth looked and elaborated particular notions between two social disciplines, a qualitative research approach is followed and the text analysis method is adopted. Textual data is compiled from writings conjecturing on architecture that belong to thinkers regarding sociology. The research first scrutinizes the understanding of architecture as a macro structure; then, within its dissolution, discusses architectural practice in an interpretative and comparative way.

Findings and conclusion: In approaches that focus on inter-level relations, architecture can be conceived as a macro structure or agency identified with its objective and subjective aspects. Accordingly, the practice is accepted as an architect-architectural production-architectural product linearity in macro understandings, and it is seen as an ordinary process bonding the architect-as-subject and the architectural-object which remains in the background of them. On the other hand, architecture can also be conceived as a dynamic field with various processes and agencies instead of positioning it into levels. Interpreting architecture in this direction focuses on architectural practice itself as a process rather than a separation as architect-as-subject or architectural-object. This understanding brings foregrounding and thinking of micro relationships. When architectural practice is focused in this way, it may dissolve, disintegrate and diversify. Thinking architecture through a macro-to-micro understanding in an interdisciplinary manner, this study advances a perspective approaching architecture as a network of diverse agencies and relations which goes beyond questioning inadequacy of architecture against macro-level facts and issues. It brings an opportunity to bring it closer to the everyday and temporal factors as well. Thus, it encourages studies in which the issues that have not been included in or remained at the periphery of social architectural debates can be examined in a more central position.

Keywords: Architectural Practice, Social, Micro/Macro, Agency/Structure

GİRİŞ

Mimarlık alanında, mimarlık ve toplumsallık şeklinde ifade edilebilir kapsayıcı üst başlığa ilişkin eleştirel yaklaşımlar, söz konusu başlığın içerdiği iki yönde de çeşitlenen bağlamlarla ele alınmaktadır. Yani bir

tarafıyla, mimarlık gibi geniş bir alanın toplumsallık ile bağı kurulurken odaklanılan mimarlığa özgü konulara ve unsurlara göre çeşitlenebilmektedir. Bir tarafıyla ise toplumsallıkla işaret edilenin ne olduğunu ortaya koyacak şekilde, sadece mimarlık ile sınırlı kalmayıp sosyal veya beşeri bilimlere ilişkin literatüre ve terimlere doğru açılabilmektedir.

Mimarlık için toplumsallık eleştirisinin odağında neyin yer alabileceğine dair belirgin bir çatallanma mimari nesne/ürün ve mimar özne/aktör üzerinden ifade edilebilir. Mimari nesne, fiziksel bir mimari mekânsal gerçeklik veya temsil olarak toplumsallık eleştirisine dâhil olabilmekte iken; mimarın toplumsallığı eleştirisi ise mimarın toplumsal sorumluluğu, rolü, görevi, pratiğinin yöntemi ve niyeti gibi konularla sürdürülebilmektedir. Böyle bir çatallanmanın varlığı, mimari nesne-ürün olarak üretilenin toplumsallığı ve mimar özne-aktör olarak üretenin toplumsallığı şeklinde bir ikilik gibi görünebilir. Ancak bu durumu bir ikilik olmaktan çok birbirinden kopuk olmayan iki tür eleştirel bakış olarak yorumlamak mümkündür. Üretilen ve üreten kadar pratiği de odağa almak bu durumu bir ikilik olmaktan çıkarmanın yolu olarak düşünülebilir.

Toplumsal mimarlık yaklaşımlarında karşılaşılan katılım odaklı mimarlık, topluluğa yönelik mimarlık, kamu yararına mimarlık, toplum yararına mimarlık gibi adlandırmalarla tartışılan türevler irdelendiğinde de odağın ne sadece üretende ne de sadece üretilende olduğu, asıl niyetin mimarlık pratiğinin farklı şekilde sürdürülme hâllerine, olasılıklarına işaret etmek olduğu fark edilebilmektedir. Öyle ki söz konusu türevler mimarlık yazınında zaman zaman "alternatif pratikler" olarak da nitelendirilmektedir.

Alternatif olmak, beraberinde neyin alternatifi olduğu düşüncesini de getirir. Alternatif olarak nitelendirilen söz konusu pratikler de; üreten açısından, başat üretim tarzının koşullarıyla çalışmanın; üretilen açısından, son durumda üretim tarzına bağlı pazarın ürünlerine dönüşmenin; mesleki bir hizmet süreci olma yönünden bakıldığında pratik açısından, yalnızca belirli varsıl toplumsal kesimlere fayda sağlayan bir süreç olmanın dışında kalabilen alternatifler şeklinde açıklanabilmektedir. Böylesi mimarlık ve toplumsallık tartışmaları, mimarlık alanında bir eleştiri hattı olarak süregelir iken bazı dönemlerde daha görünür şekilde gündem teşkil edebilmektedirler. Bu görünürlük, mimarlığa özgü kriz dönemlerine ve paradigmatik kaymalara bağlı olarak tartışmaların güncellenmesi şeklinde oluşabildiği gibi; yerel, küresel çaplı güncel teorilerle veya olgularla birlikte yeni disiplinler arası tartışmalar şeklinde de meydana gelebilmektedir.

Örneğin, Doucet ve Cupers (2009: 1-2), mimarlık teorisi ve eleştirisine ilişkin bir dönüşüm olarak Modernizmin sorunsallaştırılmasına işaret etmekte, bu yöndeki düşünsel gelişmeler doğrultusunda mimarlığın ve toplumsallığın da yeni bakış açıları ile birlikte ele alındığını dile getirmektedirler. Gribat ve Meires (2017: 779-780) de son yıllarda mimarlık disiplini içinde yeni bir toplumsal mimarlık tartışmasının ortaya çıktığını ve bu tartışmanın mimarlığın pazar ekonomisine güdümlü şekilde sürdürülüşüne bağlı bir krizin ilanına dayandığını belirtmektedirler. Bu durumu üst sınıf ekonomik/politik çıkarlara çok fazla odaklanmış bir mimarlığın krizi olarak nitelendirmekte ve mimarların toplumun savunmasız ve marjinal grupları için inşa etme alternatiflerini bir çıkış yolu olarak ele almaktadırlar. Lepik (2010: 12) de benzer bir eleştiri getirerek mimarlığın kendisini ekonomik ve politik çıkarların hizmetine çok fazla yerleştirdiğini ve toplumsal kaygılara çok az özen gösterdiğini söylemektedir. Oosterman (2008: 2-3) ise bu duruma 20. yüzyıla yayılan bir süreç üzerinden ve mimarın rolündeki dönüşüm üzerinden değinmektedir. Endüstriyelleşmeyi, 20. yüzyılın başlangıcı itibarıyla mimarın rolünü tamamen gereksiz kılmakla tehdit eden alaycı bir hayalet olarak tasvir eden yazar, az sayıda mimarın giderek daha şaşırtıcı ve görsel olarak estetik binalar üretme şansına sahip olmasıyla bu tehdidin fark edilmediğini izah etmektedir. Yüzyıl sonuna gelindiğinde ise mimarın toplumsal konumunun elinden kaymış ve buharlaşmış olduğunu; toplumsal ilişkilerde düzenleyici, politik kararlara ilham verici, mekâna dair profesyonel bir güç oyuncusu olarak ele alınabilecek bir mimarın söz konusu yüz yıllık gelişimde bir ara aşama olarak kaldığını açıklamaktadır.

Konu edilen krizlerin, dönüşümlerin ertesi veya uzantısı nitelikli bir dönem olarak 2000'li yıllarda, mimarlığı ve mimarlık pratiğini yeniden tanımlamak, yeniden düşünmek, yeniden keşfetmek gibi ön vurgusu "yeniden" olan toplumsallık eleştirileri alan içerisinde bir kez daha görünür olmuştur. Endüstriyelleşme yerine post-endüstriyelleşmenin, kapitalizm yerine geç kapitalizmin, liberalizm yerine neo-liberalizmin, hümanizm yerine post-hümanizmin iyiden iyiye global tartışmaların merkezine yerleştiği bir dönemde, yukarıda da değinildiği gibi, mimarlık ve toplumsallık tartışmaları da yerel, küresel çaplı güncel teorilerle veya olgularla birlikte disiplinler arası tartışmalar şeklinde yeniden görünmüştür demek mümkündür.

Doucet ve Cupers (2009: 1-6) tarafından da yakın zaman için belirtildiği gibi; coğrafyadan kültürel çalışmalara kadar birçok alan, yenilenen geç kapitalizm eleştirilerinden veya küresel neoliberalizme alternatif tahayyüllerinden ilham alarak eleştirellik ve katılım üzerine yeni düşünme yolları izlemeye başlamıştır. Yazarlar, mimarlığın dışındaki bu disiplinlerin göstermeye başladığı koşulların mimarlığa ilişkin kimi esaslara da radikal bir şekilde meydan okuduğunu ifade etmektedirler. Küresel ekonomik yeniden yapılanma, ağlar-eş zamanlılık-çokluk-doğrusal olmama üzerine kurulu hâlde yükselişe geçmiş bilgi toplumu gibi yeni koşulların, mimarlığın eleştirel potansiyelini ve aynı zamanda dünyadaki failliğinin tek anlamlılığını sorgulatır olduğunu söylemektedirler. Bu açıdan "faillik" kavramını, mimarlığın bu yeni dünya ile çeşitli bağlantılar kurma yollarını anlayabilmek adına verimli bir kavram olarak göstermektedirler. Failliği, modası geçmiş bir büyük teorinin yerini alacak bir büyük fail teorisi inşa etmekten ziyade, uygulanabilir/elverişli (workable) parçalara bölünebilir, sonrasında yeniden yapılandırılabilir ve birleştirilebilir bir yaklaşımın kavramı olarak vurgulamaktadırlar. Yine, Gribat ve Meires (2017: 784-785) de yakın zaman için benzeri bir dönüşümü vurgulayarak toplumsallığa ilişkin mimarlık sergilerinin ve yayınlarının, dünyanın farklı yerlerinde yeni bir toplumsal mimarlığın yükselişini gösteren, bulunduğumuz çağa ait farklı ve oldukça küçük ölçekli mimari proje seçkilerine dayandığını belirtmektedirler. Benzer bir yaklaşımla mimarlık ve tasarım uygulamalarının çeşitliliğini öne çıkarmaya yönelik bir veri tabanı oluşturan "Mekânsal Faillik" çalışması, binaların ve mekânın nasıl üretilebileceğine ilişkin yeni bir bakış açısı olarak tanımlanmaktadır (Spatial Agency, t.y.). Çalışma, mimarlık yapmanın diğer yolları için, binaların görünümüne ve yapımına ilişkin geleneksel mimarlık odağından uzaklaşılabilen, mimarların ve mimar olmayanların birlikte çalışabildiği çok daha geniş bir fırsat alanı önermektedir. İnşa etmenin/binanın, mekânsal bir soruna mutlaka en iyi çözüm olmadığı inancıyla; bireysel bir kahraman mimar figürü yerine, temsilcilerin başkalarıyla hareket ettiği çok daha iş birlikçi bir yaklaşımın izlenebildiği ikinci bir mimarlık tarihini ortaya çıkarmayı amaçlamaktadır.

Buraya dek belirtildiği gibi aslında alternatif pratikleri görünür kılmaya ilişkin araştırmalar, yayınlar ve derlemeler alan içerisinde var olagelmiştir. Ancak Awan, vd. (2011: 26-34), meseleyi söz konusu çalışma için "Alternatif Mimari Pratik" başlığının niçin kısıtlayıcı olduğunu açıkladıkları bir başlangıçla ele almaktadırlar. Böyle bir adlandırmanın, kapsamlı ve güçlendirici olmasını istedikleri bir çalışma için neden giderek daha sınırlayıcı hâle geldiğini anlatmaktadırlar. Onlara göre alternatif, çoğu zaman ikili bir yapıda olduğu gibi tam olarak kaçmak istediği referans terimleriyle sınırlanmakta, her zaman karşı çıktığı normun gölgesinde kalmaktadır. Mimari ise, bina ile nesne olarak ilişkilendirilme ve nesnelerin statik özellikleriyle ilişkili yönlere öncelik verme eğilimindedir ve bu durum üretim süreçleri, toplum, doğa ilişkileri gibi açılımları arka planda bırakmaktadır. Bir yandan da, "mimari=bina" denklemi mimarlığın metalaşmasını genişletmektedir. Buna bağlı olarak yazarlar, alternatif mimari yerine Lefebvre'in akılda kalıcı "(toplumsal) mekân (toplumsal) bir üründür" ifadesine de gönderme ile daha açık olasılıklar barındıran "mekânsal" kavramını tercih ettiklerini dile getirmektedirler. Yazarların bir diğer eleştirisi de pratik içindir. Çoğu mimari pratik, müşterilerin ve pazarın kısa vadeli öncelikleriyle belirlenen taleplerle sınırlı gerçeklikler olduğu için pratik sözcüğünün de çağrışımsal bir engel teşkil ettiğini düşünmektedirler. Bunun üzerine, sadece belirleyen ya da sadece belirlenen olmanın ötesine geçen ve dönüştürme olasılığını barındırmaya devam eden bir yaklaşım üzerinden faillik kavramını kullanmayı öne sürmektedirler.

Başlangıçta işaret edildiği gibi, mimarlık ve toplumsallık tartışmalarının, toplumsallığın ele alınışında yalnızca mimarlık ile sınırlı kalmayan ve beşerî bilimlere doğru genişleyebilen tarafını hatırlayarak; toplumbiliminin (sosyolojinin) de, bu kapsamda, mimarlık alanının sıklıkla başvurduğu ve ilişki kurduğu bir alan olduğunu belirtmek gerekir. Güncel tartışmalarda tespitler veya öneriler, çıkış yolları şeklinde gözlenen düşüncelerde de bu durum kendisini göstermektedir. Örneğin, bireysel bir kahraman olarak mimarın sorgulanışı, küçük ölçekli pratiklerdeki artış, failliğin mimarlık için güncel bir tartışma teşkil etmeye başlaması gibi açıklamalarda görüldüğü gibi, meselenin toplumbilimi ile bağını düşündüren terimlere doğrudan referans verilebilmekte veya dolaylı olarak toplumbilimsel epistemoloji tartışmaya davet edilebilmektedir.

Bu metin mimarlık ve toplumsallık olarak ifade edilen geniş eleştiri hattı kapsamında görülebilecek kuramsal bir araştırmayı ve tartışmayı hem mimarlığı hem de toplumbilimini içeren bir güzergâh ile ortaya koymaktadır. Mikro/makro, faillik/yapı kavramları aracılığıyla mimarlığın kavranışına odaklanarak, bunu düşünmenin getirdiği imkân ile mimarlık pratiğini ve tasarım düşüncesini toplumsallık bağlamında ele almayı amaçlamaktadır.

ÇALIŞMANIN YÖNTEMİ VE AMACI

Kennedy (2012: 1-6), mimarlığı sosyolojik olarak anlayabilmenin "Mimarlık nedir?", "Mimar kimdir?" gibi soruları yanıtlayabilmekle mümkün olabileceğini ve yine bunu anlayabilmek için, içinde bulunulan toplumu da tarihsel bir perspektif içinden değerlendirebilmek gerektiğini söylemektedir. Burada, mimarlığa bakış ve topluma bakış şeklinde adlandırılabilecek iki yoldan bahsedilmektedir denebilir. Mimarlık, mekâna odaklanan bir alan olarak mekânsal eleştiride topluma da sıklıkla bakmıştır, toplumu yorumlamıştır ve zaman zaman topluma yol gösterme rolünü de üstlenmiştir. Bunu yaparken üretilen "mimar/mimarlık" ve "toplum" şeklindeki düzeysel ayrımın, daima birinden diğerine doğru uzanır bir ilişki gibi gözükmesi tartışmaya açık bir taraf da barındırmaktadır. Bu, mimarlığın diğer konular ve olgular ile ayrık bir alan, bir disiplin olarak ilişkilendirilmesinin yerine gitgide karmaşıklaşan bağlara erişmiş bir dünyada mimarlığı daha çeşitli, karmaşık eylemsel ilişkiler ile düşünmeye geçişe dair de bir tartışmadır. Mimarlık ve toplumsallık eleştirisini mimarlık ve toplum düşüncesi ile sınırlandırmak yerine, mimarlığın toplumsallığını düşünmeye geçmek şeklinde genişleten bu bakış açısı, etkileşimlerin ve olasılıkların arttığı bir düşün alanına geçişe de işaret eder. Giriş bölümünde işaret edilen faillik kavramı da bunun için bir araç olarak değerlendirilmektedir. Failliğin, yakın zamanlı mimarlık literatüründe öne çıkışının ortaya koyulmasının ardından toplum bilimsel literatür içerisinden irdelenmesi ile onunla ilintili düalite (ikilik) sorunsalı da görünür olmaktadır. Söz konusu sorunsala ilişkin gelişmeler disiplinler arası bir kesişimde çalışmanın kuramsal çerçevesini şekillendirmektedir. Dolayısıyla, çalışmanın yöntemini ve amacını açıklar iken önce güncel mimarlık ve toplumsallık eleştirisine dâhil olan bu kavramsallığı fikir verecek ölçüde sosyolojik literatür ile biraz daha açmak yerinde olacaktır.

Faillik kavramının arka planında sosyolojik epistemolojide onunla bir arada tartışılagelen "yapı" kavramının ve yapı-faillik düalitesine dair eleştirinin içerilmekte olduğunu düşünmek mümkündür. Kökleri Aydınlanma'ya, Kartezyen felsefeye dayanan ve Sanayi Devrimi'ne uzanan bir tarihsellikle, sosyolojik düşüncede toplumsalı anlama, yorumlama biçimlerine ilişkin birtakım düaliteler ortaya çıkmıştır (Turğuter ve Evren, 2019: 33-45). Layder'ın sosyolojik düalitelere dair yaklaşımını incelemek, yapı-faillik düalitesini değerlendirebilmeye ve düalite konusunu daha kapsamlı şekilde aktarabilmeye yardımcı olmaktadır. Makro-mikro ve yapı-faillik düalitelerini şematik bir sıralama içerisinde açıklayan Layder; bu sıralamada, makro-mikro düalitesinin üstte yer aldığını, çünkü bu düalitenin kendi koşulları bağlamında yapı-faillik düalitesini de içerdiğini belirtmektedir. Makro-mikro düalitesi toplumsal analizin odağında hangisinin olması gerektiğine ilişkin bir ayrıma işaret etmektedir. Bu açıdan, Layder, bu düalitenin analiz düzeyine ve analiz ölçeğine ilişkin olduğunu söyleyerek, mikro ile yüz yüze davranış, gündelik hayat, toplumsal hayatın rutinleri gibi küçük ölçekli unsurların analizine yoğunlaşan tarafı; makro ile de kurumlar, güç ve kaynakların dağılımı gibi büyük ölçekli ve kişisel-olmayan unsurların analizine yoğunlaşan tarafı göstermektedir (Layder, 2013: 1-13).

Yapı-faillik düalitesi ise Layder için iki esas sorunla bağlantılıdır. İlki, faillik (eyleme) tarafına yönelik olarak, "İnsan etkinliği içinde yer aldığı temel toplumsal koşulları nasıl biçimlendirir?" sorusunun yanıt arayışı; ikincisi ise, yapı tarafına yönelik olarak, yapılar, kurumlar, kültürel kaynaklar gibi toplumsal unsurların toplumsal etkinliği nasıl biçimlendirdiği sorusunun yanıt arayışıdır. Yapı ile failliği bir ikilik yapan durum, kısaca, faillerin/eyleyenlerin kendilerine özgü içsel süreçleri ile mi eylemde bulunabildikleri yoksa bu eylemlerin toplumsal yapıların belirleyiciliği ile kuşatılmış mı olduğu sorusuna ilişkindir. Bu bağlamda birçok sosyoloji düşünürü yapının makro ile failliğin de mikro ile bağlantılandırılabildiğini dile getirmiştir. Örneğin Layder (2013: 6) da yapının makro ile bire bir aynı şey olmadığını belirtmekte fakat ikisinin de yeniden-üretilen güç ve toplumsal organizasyon kalıplarına işaret etmek gibi ortak bir özelliği olduğunu eklemektedir. Benzer şekilde mikro analize odaklanma niyetleri ile faillik ve kısıtlayıcılık konusuyla ilgilenme arasında da bir örtüşme olduğunu söylemektedir. Bir diğer sosyoloji düşünürü Ritzer da mikro-makro ve faillik-yapı konularının benzer görülerek çoğu zaman birbirini andırır şekilde ele alındığını ifade etmektedir. Ritzer'a göre mikroskobik ve makroskobik kuram çatışmaları arasındaki toplumsal belirleyicilik çekişmesi özellikle 20. yüzyılın son çeyreğine doğru çözülmeye başlamış, ikiliklerin yerini mikro-makro bağlantısına dair artan bir ilgi almıştır ve buna koşut bir gelişme yapı-faillik bağının düşünülmesinde de gerçekleşmiştir (Ritzer, 2011: 367-369). Düaliteleri bütünleştirme, düaliteleri aşma, düalitelerden çıkış gibi tanımlamalarla açıklanan bu yaklaşımlar, toplum bilimsel teorilere ve yöntemlere dair yeni bakış açıları getirmiştir.

Görsel 1. Çalışmanın izlediği yol

Çalışma kapsamında faillik kavramının çıkış noktası olmasıyla varılan düaliteler sorunsalına ilişkin söz konusu gelişme, mimarlığın toplumsallığını güncel olarak tartışabilmek için kavramsal bir zemin teşkil etmektedir (Görsel 1). Giriş bölümünde mimarlık alanına ilişkin literatür araştırması ile ortaya koyulduğu gibi mimarlık toplumsallığı mesele ederken toplumbilimindeki gelişmelerden faydalanmakta ve buna dair kavramlar, eleştiriler ile sosyal bilimlere açılabilmektedir. Mimarlığın toplumbilimine yönelimini tamamlayıcı bir çift yönlülük sağlamak adına çalışmanın araştırma sorusu "Toplumbilimsel bir perspektiften mimarlığa nasıl yaklaşılabilir" şeklinde belirlenmiştir. Böylelikle sosyoloji alanına ilişkin literatür araştırması ile genişletilen yapı-faillik, makro-mikro kavramları ve yaklaşımları mimarlığı ve mimarlık pratiğini toplumsallık bağlamında yeniden düşünebilmeye aracı olmaktadır. Hem toplumsala bakış ortaklığında mimarlıkla yolu kesişebilen hem de mimarlığa bakış açısından mimarlık için dışarıdan bir göz olarak da konumlanabilen disiplinler arası bir bağda, sosyolojiye ilişkin kavramlar üzerinden mimarlığın kavranışı incelenebilmekte ve eleştiriye açılabilmektedir. Çalışmada düaliteleri aşmaya yönelik iki tür toplumsal çözümleme yaklaşımı ileri sürülmektedir. Biri, düaliteleri aşmak için makro-mikro bağlantılı yeni toplumsal çözümleme yöntemleri geliştiren veya bu tür yöntemlerin izinde olan yaklaşımdır. Diğeri ise kategorize edici toplumsal çözümleme yöntemlerini benimsemeyen yaklaşımdır. İki yaklaşım arasındaki tutum farkı, toplumsallığa bakışta düzeyler arasında bir taraf seçmeyerek düzeyler arasındaki ilişkilere odaklanmak; ya da düzeyleri varsaymak yerine doğrudan odağı pratiğe ve sürece kaydırmak şeklinde özetlenebilir. Bu doğrultuda nitel araştırma izlenerek metin analizi yöntemi kullanılmaktadır. Metinsel veriler, toplumbilimi ile bağlantılı düşünürlerin mimarlığa değindiği yazılardan derlenmektedir. Mimarlık üzerine görüşleri olma ve birbirlerine göre de farklı bakış açılarıyla toplumsal çözümlemeye yaklaşıyor olma nitelikleri ile Ritzer, Tapie, Lefebvre, Foucault, Latour'un doğrudan mimarlığa değindiği yorumları çalışmanın örneklemini oluşturmaktadır. Toplumbiliminden mimarlığa açılan bu doğrultu, mimarlık alanına ait düşünceler ile karşı karşıya gelen veya paralellik kuran yönleri yorumlamacı ve karşılaştırmalı bir yaklaşımla değerlendirebilmeyi olanaklı kılmaktadır. Böylelikle mimarlık pratiği, mimarlık-mekân ilişkisi üzerine tekillikten çıkarak çeşitliliğe açılan bakış açıları mimarlığın toplumsallığı tartışmasına katılabilmektedir.

BULGULAR

Mimarlığın Makro Bir Yapı Olarak Kavranışı

Ritzer (2011: 513-539), bugün makro ve mikro düzeyleri tamamen reddeden yaklaşımların da sosyoloji kuramı içinde etkili olduğunu belirtmekte, fakat toplumsal dünyanın karmaşıklığı uğraş edinildiğinde sosyologların kimi çözümleme şemalarına ihtiyaç duyduklarını açıklamaktadır. Buna bağlı olarak kendisinin makro-mikro/nesnel-öznel çaprazlamalı düzeyler arası toplumsal çözümleme şemasına değinmektedir (Görsel 2).
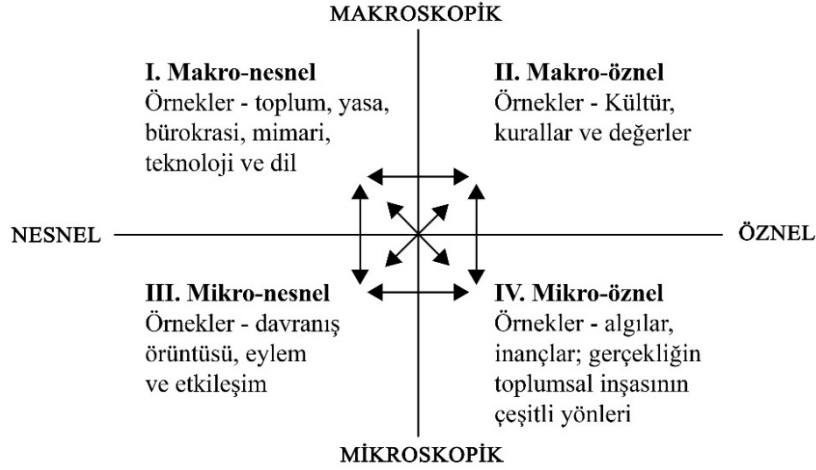
Görsel 2. Ritzer'ın toplumsal çözümlemesinin başlıca düzeyleri

Onun için, "bu dört düzeyden her biri, kendi içinde önemlidir ancak en önemlisi, onlar arasındaki diyalektik ilişkidir" (Ritzer, 2011: 371). Yine ona göre, bu şema bir düzeyin bir başka düzeye baskınlık veya sıralı üstünlük kurduğu bir sınıflandırmayı temsil etmemektedir ve aralarındaki ilişki sürekli değişen anlık bir görüntü gibi düşünülmelidir. Mimarinin/Mimarlığın (özgün şemada Architecture) makro-nesnel düzeyde konumlandırılmış olması Ritzer'ın çözümlemesini bu incelemeye taşıyan detaydır. O, düzeyler arasına bakmak ile ilişkisel bir yaklaşımı vurgulamakta fakat mimarlık yine de toplumsal çözümlemesinde makro, büyük ölçekli yapısal ve nesnel bir düzeyde konumlandırılmaktadır.

Mimarlığı makro-nesnel bir düzeye konumlandırmasının arka planını yorumlayabilmek için Ritzer'ın mimarlığa ilişkin birtakım düşünceleri ve yorumları araştırmaya katılmıştır. Ritzer, "Küreselleşmiş ticari mimarlık son derece McDonaldlaştırılmış olmaktan başka bir şey olabilir mi?" başlıklı yazısında tüketim odaklı, büyüsü bozulmuş sistemler dediği McDonaldlaştırılmayı (McDonaldization) mimarlığa uygular. Genel hatları ile, ticari amaçla rasyonelleştirilmiş, bir yerden bir yere tekrar eden, çok temel ve işlevsel strüktürlü, tüketimin araçları ve katedralleri olan mega mağazalar, alışveriş merkezleri, isim ve satış hakkı kullanılarak genişlemiş zincirler (franchises) bu kümededir. Uygulama yöntemindeki hiçbir şey ve bir şey sürekliliğinde, "hiçbir şey" genel, merkezi, kontrollü bir toplumsal biçimdir. Yerel zamandan yoksundur. Her zamana ait olmasıyla zamansızdır. İşlevi açısından insanlıktan çıkarılmıştır/ makineleştirilmiştir (dehumanized). Bu açıdan, big box stores (büyük kutu mağazalar; süpermarket), içinden tüketim faaliyetinin akıp geçtiği kutu biçimi ile de Ritzer için hiçlik tanımını karşılamaktadır.

Süpermarket bir hiçlik örneği iken çoğu konser salonu ve opera binası ise yere özgü tasarlanmaları, ayırt edici içerik bakımından zengin olmaları nedeniyle Ritzer için "bir şey" grubundadırlar. Ritzer, Sydney Opera Binası'nın tartışmasız şekilde bu yapıların en belirgini olduğunu ve Walt Disney Konser Salonu'nun da seçkin bir yapıt olarak bu gruba dâhil olduğunu belirtmektedir (Ritzer, 2007: 123-145). Onun için, "McDonaldlaşmanın dereceleri vardır. McDonaldlaşma ya hep ya hiç tarzında bir şey değildir" (Ritzer, 2017: 56). Bu bağlamda Ritzer yaratıcılığa bağlı büyük mimarlık (great architecture) ile yüksek derecede McDonaldlaştırmayı ilişkilendirmenin çok zor olduğu, daha sıradan ticari mimarlığın ise McDonaldlaştırma sürecinden açıkça ve büyük ölçüde etkilendiği sonucuna varmaktadır. Ritzer'ın vardığı sonucun tartışmaya açık tarafının yanı sıra toplumsal çözümleme şeması yeniden hatırlandığında, makro-nesnel düzeyde konumlandırdığı mimarlığı inşa edilmiş ürünleri üzerinden değerlendirdiği söylenebilmektedir.

Tapie ise (2018: 164), barınma meselesine odaklandığı yaşamortam sosyolojisinde, mekâna göndermede bulunmanın toplumbilimi ile mimarlığın ortak özelliği olduğunu belirtmektedir. Ancak onun mekân üzerine kurduğu bu ortaklıkta da bu kez mekân ayrışır. Bu ayrım, Tapie'nin yorumlarında, mimarların yaptıkları çalışmaları değerli kılmak için beslendiği bir kapsamlı mekân düşüncesi ve mimarlığın zaman zaman toplum ile problemli bir bağlantı kurmasına da yol açan ürünlerle sonuçlanan mimari mekân düşüncesi şeklinde görülebilmektedir. Mimarlık gerek aktörleri gerekse ürünleri ile çok daha katmanlı mekânsal etkileşim olasılıkları barındırabilmekte iken, Tapie tarafından mimarlık ve toplum ilişkisi, fiziksel bir mimari mekân ve

onun topluma etkisi şeklinde makro bir genellik ve sınırlandırma ile daha kapsamlı bir mekân düşüncesine yerleştirilir.

Tapie (2018: 165-180), aynı zamanda bu çalışmasında halkın yaşam biçiminin değiştirilebileceği veya değiştirilmesi gerektiğini düşünen 20. yüzyıl Modernistlerini olumsuz yönde eleştirmektedir. Öte yandan, bugün için, yüklenicilerin veya pazarlama söylemlerinin yerine bizzat mimarların derin ve duyusal anlamlar yükleyerek yapıtlarını anlatmaları sayesinde toplumda da bir mimarlık algısı oluşturabileceklerini dolaylı şekilde önermektedir. Böylelikle Tapie, tasarlanmış mekân ile kullanıcı algısı arasındaki kopukluğun giderilmesinde köprü olacak bir mimari kavrayışın inşasına da işaret eder. Bu açıdan, nasıl ki Ritzer mimarlığı -mimarın yaratıcılığına bağlı yapıtlara tanıdığı imtiyaz ile- mimari ürünler bütününe odaklı bir makro-nesnel düzeye yerleştiriyor ise, Tapie'nin de söz konusu makro-nesnelliğe mimari mekânın bir katmanı gibi işleyecek büyük ölçekli normlar ve değerler düzeyi olan makro-öznelliği eklediğini söylemek mümkündür.

Mimarlığın başka bir alanda bu şekilde makro kavranışı, onun birçok boyutu arasından hangisi ile özdeş olarak ele alınabildiğini de göstermektedir. Üretim tarzı ile bağlantılı bir eleştiride mimari ürünlerin öne çıkmasında ve elverişli yaşam alanları kurup kuramamakla bağlantılı bir eleştiride mimarların öne çıkmasında görüldüğü gibi, mimarlık bazen ürünleri ile özdeşleştirilen bazen de üretenleri ile özdeşleştirilen bir yapı olarak kavranabilmektedir. Aynı zamanda, mimarlığın makro bir düzey olarak kavranışı üzerine düşündükçe, diğer yapıların mimarlığa etkisini dolambaçsız şekilde dile getirmekte de böyle bir kavranışın yeri olduğu fark edilebilmektedir. Örneğin, mimarlık ve politika, mimarlık ve kapitalizm, mimarlık ve neoliberalizm şeklindeki kullanımlar bu açıdan makro düzeyler arasında kurulmuş bağlantılar olarak düşünülebilir.

Ek olarak, bu yönde bir makro kavranış üzerine bir kez düşünmeye başlandığında, mimarlığın diğer düzeyler ile ilişkilenmesi ve diğer düzeylerden etkilenmesi üzerine alana ilişkin yorumlarda da bunu fark etmek mümkün olabilmektedir. Türkiye'de 1960'ların toplumcu söylemlerine ilişkin bir örnek olarak, Gürol Gürkan'a (1968: 20) ait, başlığıyla da bir konumlandırma arayışına işaret eden "ülkemizde mimarlık nerede duruyor" isimli yazıdaki şema da toplumsal yapı ve yaratıcı güç etkisi ile mimarlığın son durumda mimarlık ürününü ortaya çıkardığı bir çizgisel hattı ve bu çizgiselliğe etkileri olan ekonomi, teknoloji gibi diğer düzeyler arası ilişkiyi sunmaktadır (Görsel 3).
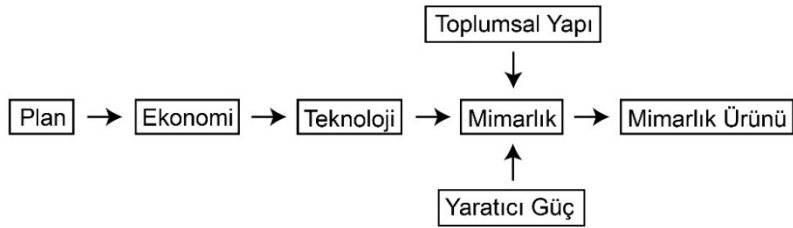
Görsel 3. Mimarlığın makro düzeyli kavranışını yansıtan bir şema örneği

Öte yandan, mimarlık makro bir kavranış ile ele alındığında, bu durumun alan içindeki mikro rollere, iş birliklerine veya çatışmalara dayalı mimarlığa özgü çeşitliliklerin, dinamiklerin göz ardı edilmesine veya gözden kaçan aşamalar olarak tekil bir düzeyde gömülü kalmasına neden olabileceği de söylenebilir.

Mekânı daha katmanlı ve çetrefilli bir üretim olarak ele alan Lefebvre (2014), onun fizikselllik üzerinden ayrıştırılabilir bir unsur olmadığını ortaya koymaktadır. Lefebvre'in düşüncesinde mekân ve toplumsal olan şeklinde ayrık, kopartılabilir bir ilişki de söz konusu değildir. Mekânı diyalektik materyalist görüşü ile irdelerken sistemli süreçlere tabi tutmakta ve bu yönüyle onu tarihsel bir izlemde, belirli çizgisel süreç aşamaları üzerinden eleştirmiş görülebilmektedir. Fakat aynı zamanda Lefebvre bu izlem ile girift, iç içe geçmiş şekilde mekâna gündelik ritmin farklı üretimleri olarak da yaklaşmakta ve onun sürekli anlık çatışmaya, yeniden üretime açıklığını dışarıda bırakmamaktadır, tarihsel dönemler olarak makro süreçleri ve gündelik mikro süreçleri ayrıştırarak değil devamlı çakışık süreçler olarak değerlendirmenin yolunu açmaktadır.

Buna rağmen, *Mekânın Üretimi* eserinde, "yetkililerin (mimarlar, şehirciler, planlamacılar) soyut mekânı karşısında, kullanıcıların her günkü edimlerinin mekânı somut bir mekân"dır (Lefebvre, 2014: 364). Lefebvre, imgeyi imtiyazlı kılan soyut temsil yöntemleri ile dünyayı planlar düzlemine indirgeyerek bunun kapitalizm

adına işleyişine yol açmaları ve yabancılaşmada pay sahibi olmaları nedeniyle mimarları eleştirmektedir. Söz konusu eleştiride, bu kez, inşa edilmiş mimari ürünlerin değil, mimarların bütünsel bir eylem ile olumsuz bir sonuç üretmesi şeklinde makro bir kabul bulunduğu söylenebilir.

Mimarlığın toplumsal bir yapı düzeyi olarak makro kavranışının yorumlandığı önceki örnekler kadar bu eleştirinin de makro-mikro ikiliğini aşmaya dayalı yaklaşımlar üzerinden yorumlanabilmesi mümkündür. Daha önce dile getirildiği gibi, makro düzeyin yapı ile mikro düzeyin ise fail eylemleri ile örtüştüğüne dair düşüncelerin ilerisine geçmiş bütünleştirici bakış açıları ne yapıyı doğrudan makro ne de faili doğrudan mikro bir düzeye iliştirmektedir. Bourdieu, aynı konumdaki faillerin bütünleşik bir tercih dizisi ile ortak bir pratik doğurabileceğini habitus (edinilmiş yatkınlıklar) kavramı vasıtasıyla açıklamaktadır (Bourdieu, 2015: 22). Bu bakış açısı, mimarlığı ürününe koşullu tutan makro düzeysel yaklaşımların yanında mimarlığın mesleki örgütlülüğünün de makro bir fail gibi ele alınışını kavramaya ışık tutmaktadır. Mimarlık pratiği de bu şekilde, hem bir yapı olarak işleyen kapitalizmin hem de kapitalizmden bağımsız kalamadan yapılaşmış mimarlık alanının etkisinde sürdürülen bir makro eylem şeklinde değerlendirilebilmektedir. Lefebvre'in eleştirisinde görüldüğü gibi, yalnızca mimari ürünler değil mimarlar ve mimarlık pratiği de toplumsal-mekânsal eleştiriye girmekte ama bu örnekte olduğu gibi daha çok ortak bir hedef için düşünen, üreten, tasarlayan tekil bir makro fail/eyleyen şeklinde olağanca kabul edilerek toptan eleştirilebilmektedir.

Öte yandan Lefebvre'in yaklaşımı için dile getirilen toplumsal-mekânsal makro-mikro iç içelik, mimarlık pratiğini sadece kalıplaşmış yapıların etkisindeki makro bir fail olarak görmemeyi sağlayan bir potansiyeli de barındırmaktadır. O, "mimarların soyut mekânı" sonucunu doğurması nedeniyle mimarlık pratiğini bir makro faillik olarak eleştirir, fakat yine onun toplumsal-mekânsal yaklaşımında makro ile bağlantılı Mimarlık Pratiği kadar mikro ile bağlantılı mimarlık pratikleri şeklinde bir bakış açısının önü de tıkalı değildir. Bakış açısını bu yönde mikro süreçlere kaydırmak, mimarlık pratiğini makro bir fail olmaktan çıkararak çeşitlendirmeye doğru bir açılım olabilir.

Makro Kavranışın Çözünmesinde Mimarlık Pratiğini Düşünmek

Makro düzey yalnızca büyük ölçekli toplumsal yapılara ve gruplara değil, benzer şekilde bütünlüklerin kültürlerine de işaret etmektedir (Ritzer, 2011: 371). Önceki bölümde Ritzer'ın yaratıcılık vurgulu büyük mimarlığa imtiyazı da yeniden anımsanarak, mimarlık biraz da kendi düşünsel-kültürel inşasıyla kendisinin makro bir düzey olarak kavranışına aracılık etmiştir demek mümkündür. Bu durum, mimarlık pratiği ve tasarım düşüncesi üzerine mimarlık alanından getirilen eleştiriler incelendiğinde görünürlük kazanmaktadır. Tschumi (2018), mimarlığın kendine odaklandığında düştüğü kaçınılmaz çelişkisinin hem mekânın doğasını sorgulamak imkânsızlığı hem de mekânsal bir praksisi denemesi olduğunu söylemektedir. Bu düşüncesinin arka planında yer alan görüşlerinden biri de 20. yüzyılın erken dönem ütopyacı ideallerinin ve onların toplumsal hedeflerinden hiçbirinin gerçekleşememiş olmasıdır. Toplumsal gerçeklik ile ütopyacı düşler birbirinden büsbütün kopmuş, "ekonominin sınırlamaları ile her şeye çözüm getiren teknik yanılsaması arasında da mutlak bir gedik" açılmıştır (Tschumi, 2018: 41). Tschumi, söz konusu düşüncelerinin yer aldığı *Mimarlık ve Kopma* eserinde mekân ve mekânın kullanımı arasındaki bağlantının gitgide kayboluşunu vurgulamaktadır. Ütopyacı düşler ile toplumsal gerçeklikler arasında, hâlihazırda içerdiği düş ve gerçeklik kavramları üzerinden değerlendirildiğinde zaten doğal ve düşünsel bir kopuş barınıyor olsa da; söz konusu ifadedeki "teknik yanılsama" detayı, mimarlık pratiğinin süregelişindeki düşünsel arka planı ve bunun toplumsal bağlamda ürettiği reel çelişkileri birlikte yorumlamaya da aracı olabilmektedir.

Örneğin Hill, modernizmin bir kez kurulduktan sonra muzaffer kalması gerektiğine dair inancın İkinci Dünya Savaşı ile zayıfladığını belirtirken bu durumun mimarlığa yansımasını da bir teknik değişim ve onun mimarlık pratiğine getirdiği düşünsel boyut üzerinden açıklamaktadır. İkinci Dünya Savaşı'nın ilkinden daha bilimsel bir savaş olduğunu ve nükleer yıkımın erken modernizmin bir toplumsal dönüşüm aracı olarak vurguladığı teknolojik ilerlemeye olan güveni sarstığını dile getirmektedir. Bunun sonucunda, 1940'ların ortalarından itibaren beliren istikrar arayışında modernizmin daha önceki toplumsal normları ve kültürel belleklerinin kendisi anakronik (zamana uymaz) kalmış, sonuç mimarlık için de "sadece erken modernizmin klasik mirasını kabul etmek değil, [...] aynı zamanda Modernizmin bir zamanlar reddettiği liberal hümanist geleneği onaylayarak mimarlığın kalbine yerleştirmek" olmuştur (Hill, 2013: 25-26). Erken Modernizmde teknolojinin mimarlık için de bir araç olarak kavranışını, mimarlık-teknoloji-toplum şeklindeki üç makro düzeyi

bağlantılandırma çabası olarak yorumlamak hatalı olmaz. Mimarlık, toplum ile toplumdan ayrı bir yapı olarak etkileşir; mimarlık, teknolojiye teknolojiden ayrı olduğu için araç niteliği yükleyebilir; ancak toplum, mimarlık ve teknoloji buluşturulmalıdır. Mimarın maksadı da bunları mekânda bir araya getirme çabasıdır. Hill'in işaret ettiği dönüş ile bu maksadı gerçekleştirmek hedefli ve yeniden hümanist geleneğe bağlanmış bir mimarlık pratiği söz konusu edilmiş olur.

Tanyeli, dijital devrime ve üretimin bilgi rejimindeki değişikliğe dek mimarlık pratiğinin; altın çağı Rönesanstan başlayan, öngörülebilir biçimi tasarımın en başında belirleyerek sonuca doğru adım adım ulaşan aşamalı bir ilerlemeye dayanan, beynin karar verdiklerini organların icra etmesi şeklinde beden metaforu gibi işlediği varsayılan bir ideolojiyi barındırdığını ifade etmektedir (Tanyeli, 2017: 322-323). Hill'in mimarlığı kattığı eleştiride sürekli ilerlemeci, toplumu ileri götürücü yanı ile ele aldığı hümanizmi Tanyeli de mimarlık pratiğinin sürdürülüşüne ilişkin olarak akla dayalı yanı ile ele almaktadır. Tschumi'den ödünç alınan "teknik yanılsama" ve mimarlığın mekâna ilişkin çelişkisi bu eksende, akla dayalı tasarımı bilen özne olarak mimardan topluma yol göstermeye doğru uzanan bir pratiğin mekânsal çelişkisi şeklinde yorumlanabilir.

Karmaşıklaşan mekânsal organizasyon üzerine yorumlarında Allen da, söz konusu çelişkiyi bir örtüştürme çabası olarak görmekte ve eleştirmektedir. Ona göre, 20. yüzyıl erken modern mimarlığın ütopyacı programlarında, yapı elemanları kararlarını "liberal demokrasinin kurumlarını şeffaf gövdeler haline getirme" ile örtüştüren kompozisyonel dinamikleştirme çabaları gözlenmektedir (Allen, 2010: 129-130). Ancak bu, klasik anlayıştaki kompozisyon parçalarını düzenlemek ve bağlantı kurmak geleneğine yine mimarların kendi düşüncelerindeki yeni birleşim, bağlantı kuralları getirmeleri ile sınırlı kalmıştır. Allen, Foucault'ya yaptığı gönderme ile bunun zıttının, sınırlayıcı mimarlıkların -yani Foucault'nun dile getirdiği gibi liberal hümanizm ile disiplinin buluştuğu kapatılma mekânlarının- ortaya çıkabileceğini belirtmektedir. Ama organizasyon ile davranışı, siyaset ile biçimi örtüştürmek şeklinde basit ve direkt denklemler kurularak ortaya çıkabilir özgürleştirici mimarlıklar yoktur (Allen, 2010: 130-131). Foucault için toplumu çözümlemede düzeysel bir kategorileştirme söz konusu değildir. Toplumda erkin temelleri ya da kurumsallaşma üzerine sorgulamaları metafizik bulduğunu ve bunların temel olgular olamayacağını dile getirmekte, "sadece karşılıklı ilişkiler ve niyetlerin birbirleriyle ilişkilendikleri sürekli aralıklar"ın söz konusu olabileceğini düşünmektedir (Rabinow, 2012: 16). Bu yaklaşımı ile Allen'ın eleştirisine benzer şekilde Foucault da Le Corbusier'nin topluma yönelim tarzını eleştirmektedir. Projelerin varlığının ve nesnelerin düzenlenmesinin mimarın toplumsal iyi niyetlerinin teminatı olamayacağını vurgulamaktadır (Rabinow, 2012: 14-15). Böyle bir yaklaşım mekânın toplumsallığını, onun reel kullanıcı pratiği ile tecrübe edilişine sıkı sıkıya bağlar, böylelikle aslında mimarlık pratiğinin hiçbir zaman mekânsal ürünün kesin sonucunu veremeyecek oluşuna da işaret eder.

Söz konusu kesin olmama durumu, pratiği, sonucu olan ürüne ulaşmadaki olağan, olması beklendiği gibi olan bağımlı bir süreç olarak kavramanın ötesine geçerek; pratiğe, bizatihi kendi özerkliği ile bir deneysellliğe dönüşebilen, gücül nitelik kazanabilen bir bağımsızlık da atfetmiş olur. Onun bir sürü çoklu mikro ilişkilerde işlemesini, parçalanabilir ve çeşitlenebilir olmasını olumlar ve buna odaklanmayı salık verir. Mekânsal Dönüş'ün (Spatial Turn) mimarlık alanınca da yoğunlaşılan sosyal disiplinler arası gündeminin yanı sıra, sayısal çağın henüz erken evreleri de mekânın artık katı kabullere, sabit çevrelere bağlı kavranışının süremeyeceğini göstermeye başlamıştır. Mitchell'in (2017) özetlediği gibi, iletişimin yere bağlılıktan gitgide hızla kopabilir oluşu ile mekânsal organizasyon değişmez ilkelere sıkı sıkıya bağlı dizilim, ardışıklık ve hiyerarşilerden ziyade dağınık, küresel bağlantılar ile ifade kazanmaya başlamıştır. Yaşam alanlarımız "artık duvarlarla değil, ağlarımızın etki alanlarıyla çevrililer"dir (Mitchell, 2017: 225).

Endüstri sonrası bilgi-iletişim-bilişim örgütlenmeleri, artık zihne ve bedene odaklı Kartezyen-hümanist kavrayış, iyi bina yapmak sanatı şeklinde eksiksiz bütünü arayan kavrayış, mekânın içine inşayı hedefleyen onu metaforik olarak bir kap gibi gören kavrayış gibi insan-merkezci mekânsal düşüncelerin yerleşikliğini bozmaya başlamıştır. Bu bozuluşta, mimari tasarım pratiğinin de belirgin dönüşümlerinden biri onun fiilen sürdürülebilme araçlarının dijital tabanlı güncellenmesi olmuştur. Böylelikle, mekânın akışkanlığı, karmaşıklığı gibi söylemlere karşılık gelen, onu gerçekleştirme kudretinde bir mimarlık pratiği alan içerisinde tanımlanabilir olmuştur. Ancak bu gelişme, Fraser'ın bir ironi olarak nitelediği şekliyle bu kez; kendi kendini üretmek, demokratik olarak dağıtmak gibi söylemleri gelişmiş bilgisayar destekli tasarım teknikleriyle örtüştürmek gayretini ve dolayısıyla büyük teknoloji övgülü bir yeni teknokrasiyi mimarlık düşüncesine katmıştır (Fraser, 2013: 5). Allen'ın ütopyacı programlardaki örtüştürme eleştirisine işaret eder şekilde

yorumlandığında, projeyi/ürünü söylem ile örtüştüren bağlam yerine teknoloji vurgulu üretme biçimini söylem ile örtüştüren bağlam, Fraser için avangart mitlerin estetik güdümlü canlanmalarıdır. Mimarlık ise bu tür canlanmalardan uzaklaştığında ve söz konusu değişim potansiyelini toplumsal oluşumlarda, gündelik pratiklerde araştırma fırsatları bulduğu bir yöne çevirdiğinde bilinmedik ile yüzleşebilecektir (Fraser, 2013: 1-13). Tasarım ile değişim üzerine düşüncelerinde Brown (2009: 3) da tamamen teknosentrik bir inovasyon görüşünün bugün için her zamankinden daha az sürdürülebilir olduğunu vurgulamaktadır.

Carpo'nun (2017), kısaca "yapım şekillerini değiştirmekten düşünme biçimini değiştirmeye geçmek" şeklinde nitelendirdiği ikinci dijital dönüm yorumu, söz konusu ironinin artık geride kalmakta oluşunu dile getiren kavrayışlardandır. Dijital tasarım araçlarının mimara bağlı biçimsel öngörülü kullanımı yerine, tasarımın ve tasarım araçlarının kendisinin bir araştırmaya yön verir olduğu pratiğin mümkün olduğunu ifade etmektedir. Frichot bunu, "tasarımcı-yaratıcının yapım maksadının öneminin özörgütlemeli sistemler gibi yeni bilgi-iletişim teknolojilerine devredilişi ve bunun sonucunda bir hedef ürün yerine beklenmedik sonlara adapte sayısız çözüm üretme imkânı veren, mimari için post-kritik bir katılım biçimine doğru gerçekleşen paradigma değişimi" olarak ifade etmektedir (Frichot, 2017: 7-9). Söz konusu paradigma değişimini mimarlık pratiği açısından sadece bir teknik değişim olarak görmek yerine; mimar-mimarlık pratiği-mimari ürün çizgiselliğindeki üretim anlayışından mimarlığın mekânsal üretimindeki fail konumlarının karmaşıklaşmasına geçiş olarak yorumlamak; yani artık mimarlık pratiğinin üretenin bir özne, üretilenin ise bir nesne olduğu şeklindeki ikilik barındıran düşünceden çıkış olarak yorumlamak mümkündür. Bu bakış açısı, mimarın kendi çerçevesinde bir bilen değil, kolektif zekânın etkileşim hâlindeki çoklu katılımcılarından biri olarak toplumsal-mekânsal konumunu yeniden düşündürmeyi sağlar.

Latour'un bilim ve teknoloji nesnelerinin sosyal uyumlu hâle gelmesinden bahsedişini mimarlık için bu doğrultuda değerlendirmek mümkündür (Latour, 2005: 10). Örneğin onun katkıda bulunduğu aktör-ağ kuramı konumların makro/mikro, yapı/fail olmaları şeklinde varsayımlara tutunmamaktadır. Söz konusu olan, dolaşan ve toplaşan varlıklar hâlinde toplumsal süreçlerdir. Faillik de yalnızca insanın failliği değildir; "actant" kavramı, insan dışı unsurlar için de eşit düzeyli yaklaşımı benimsemektedir. Esas odaklanma ise insan ve insan dışı eyleyicilerde değil, onların süreçsel etkinliklerini içeren ağdadır ve hiçbir unsur bir başka unsurun varlığından, ağdaki ilişkilerinden bağımsız, kendi içsel nitelikleri ile anlaşılamaz. Latour (2005), bir ağın bir toplum olmadığını vurgulamaktadır. Ağlar; türlü araçlar, kayıtlar, biçimler, formüller vasıtasıyla etkileşimlerin son derece yerel, pratik, küçücük yerlerde toplanışlarıdır.

Latour ve Yaneva (2014); mimari tasarımın da beklenmedik birçok aktörün bir araya gelişine imkân veren karmaşık bir kümeyi kapsadığını belirtmektedir. Burada söz konusu aktörler; mimarlar kadar köpük ve kesiciler, sayısal görseller, bilgisayarlar gibi insan olmayanlardır da. Yazarlar, mimara mal edilmiş tasarım felsefelerini birtakım akımlar ile analiz etmek gibi mimarlık dışı soyut kuramsal çerçeveler yerine; tasarım süreçlerinin ürünün ortaya çıkışı ile tamamlandığını kabul etmeyen, her ürünü ayrı ayrı "şeysi doğası" ile bir eyleyici olarak kabul etmeye ve süreçteki reflekslerini gözlemeye devam eden somut araştırmaları odağa almayı mevzubahis etmektedirler. Bir yandan da yine tasarım süreçlerinin kendi doğalarında gözlenebilir, örneğin fiziksel modelin üretildiği malzemenin davranışındaki potansiyeli yakalayabilmek gibi, mikro detayları örnek vermektedirler.

Bu örnekler, hâlihazırda, tasarımın kendi sürecinde dönüşebilir ilişkilere, sonuçlara açık bir yöntem olarak kullanıldığı tasarım yoluyla araştırmanın amaçlarına da ilişkindir. Söz konusu olan, toplumsallığı yalnızca mimarların toplumsal konumlarına ilişkin meseleler üzerinden ele almak veya yalnızca üretilmiş, sonuçlanmış mimari ürünlerin topluma etkileri üzerinden ele almak şeklindeki yaklaşımlar karşısında; toplumsallığın sürmekte olan, tamamlanmamış, sonucu öngörülmemiş süreçler üzerinden devamlı hâlde işlerliğine işaret edilmesidir. Latour'un (2005) dile getirdiği gibi, bir şeyleri açıklama gayretindeki holist bir toplumsal kabulü politikanın yokluğu demek olacaktır; "ancak dirençleri tek tek test edilebilen küçük bağlardan oluşan kuvvetler söz konusu olabiliyor ise belirli bir durumu değiştirme şansı vardır" (Latour, 2005: 250). Bu açıdan, pratiklerin ve onlara ilişkin türlü eyleyenlerin çeşitliliğini ve bu çeşitliliğin kaynağı olan mikro süreçleri mimarlığın toplumsallığını düşünürken dışarıda tutmamak ve merkeze almak, meseleyi üretenler üzerine veya üretilenler üzerine şeklindeki kategorilerle görmenin ötesine geçebilmeyi sağlayacak bir yol şeklinde yorumlanabilir.

SONUÇ VE DEĞERLENDİRME

Disiplinlerarası bir bağda toplumbilimiyle ilişkili düşünürlerin mimarlığa dair yorumlarını incelemek, mimarlığın farklı boyutları ile özdeş tutularak ele alınabildiğini göstermektedir. Makro/mikro, yapı/faillik kavramları aracılığıyla bu durumun farklı kavranışlar şeklinde yorumlanabilir olduğu ortaya çıkmaktadır.

Mimarlık, düzeylerarası ilişkilere odaklanan yaklaşımlarda bir makro yapı olarak kavranabilmektedir. Bunun, mimarlığın toplumsal yaklaşımlarda nesnel olarak kavranışı ve öznel olarak kavranışı şeklinde iki tarafı barındırdığı görülebilmektedir. Mimarlık, sonuç ürünleri üzerinden bir bütünsellik olarak ele alındığında nesnel; üretenler bütünü olarak mimarlar ile özdeşleştirildiğinde ise öznel bir alan olarak makro düzeyde konumlandırılmaktadır. Mimarlık pratiği de makro kavranışlarda mimar-mimarlık pratiği-mimarlık ürünü şeklinde çizgisel bir doğrultuda kabul edilmekte; daha çok mimarlara veya mimarlık ürünlerine odaklılığın arka planında kalan, mimar özne ve mimari nesne arasındaki olağan bir süreç şeklinde görülmektedir. Mimarlık pratiğinin olağan bir süreç olarak görülmesinde onun mesleki bir pratik olarak çoğu zaman aynı yöntemler ile sürdürülmesi şeklinde düşünsel bir kabul olduğu izlenebilmektedir. Dolayısıyla, aslında mimarlık pratiğinin yöntemine ilişkin öneriler, eleştiriler de yine mimarların niyetleri, yaptıkları, yapabilecekleri üzerinden vurgulanmakta veya mimarın yaratıcılık derecesine güdümlü şekilde ölçülebilmektedir. Bu açıdan, söz konusu eleştiriler ve önerilerde mimarlık pratiğinin de makro bir eylem olarak görülmesi, makro bir eylem olarak makro sorunlar üretmesi şeklinde bir düşünsellik de barınmaktadır. Öte yandan mimarlık, düzeysel bir konuma atfedilmek yerine karmaşık süreçlere ve failliklere özgü olarak da kavranabilmektedir. Mimarlığın bu yönde yorumlanışı, mimar özne veya mimari nesne şeklinde bir ayrışma yerine bir süreç olarak mimarlık pratiğini odağa almaktadır. Bu kavrayış, beraberinde mikro ilişkileri öne çıkarmayı ve düşündürmeyi getirmektedir. Mimar özne ve mimarlık ürünü arasında kendini gösteremeyen bir bağ olarak kalması yerine, mimarlık pratiği, kendisine odaklı düşünülmeye başlandığında; failleri ve faillik ilişkilerini genişleten süreçler şeklinde çözünmekte, dağılmakta ve çeşitlenebilmektedir. Böylelikle, mimarlık pratiklerini yalnızca ürün üreterek mekâna katan bir eylem olarak görmek yerine toplumsal-mekânsal katılımı çeşitlendiren kurucu süreçler olarak ele almak da mümkün olmaktadır.

Bu açıdan mimarlık ve toplumsallık eleştirisini mimarlık ve toplum düşüncesi ile sınırlandırmak yerine mimarlığın toplumsallığına doğru genişletmek şeklinde başlangıçta öne sürülen amacın, aynı zamanda mimarlığın mekânsal bağını pratikler üzerinden kuran bir toplumsallık düşüncesi olduğunu sonda söylemek mümkündür. Mimarlığın makro bir düzey olarak kavranışında onun toplum, teknoloji, ekonomik yapı gibi diğer düzeylere etkisi veya onlardan etkilenişi yorumlanırken; mekân, mimarlığın ürettiği nesnelere ev sahipliği yapan ve bu şekilde mimarlığın diğer düzeyler ile bağını kuran dolaylı bir konum, bir bağlaç olarak tezahür edebilmektedir. Öte yandan mimarlık pratiklerine dair tüm unsurların birbirleri ile ve henüz karşılaşmadıkları, karşılaşmaya açık oldukları yeni failler ile türlü ilişkilerini barındıran bir ağ düşüncesinde, mekâna atfedilen bu mesafeli ve dolaylı rol söz konusu değildir. Yeni failler ile ortaklaşmaya, disiplin sınırlarını aşan kompleks meselelere dair araştırma sahasını, merakını çeşitlendirmeye açık bir ağ, kaynağı sürekli mikro pratikler olan bir alan ve bizzat toplumsal mekânın etkinliği olarak görülebilir. Sonuç olarak, mimarlığa makrodan mikroya doğru çözünen bir kavrayış hattında yaklaşan bu çalışma, mimarlığın evvelden üstlendiği veya ona atfedilen büyük çaplı meseleler ve makro olgular karşısındaki yeterliğini sorgulayan eleştirel eşiğin ötesine geçerek onu yeniden yorumlayabilme imkânını getirmektedir. Alanın farklı adaptasyon ve toplaşmalara açılabilir, karışabilir çoklu pratik olasılıklarını öne çıkarmaktadır. Böyle bir bakış açısı, bugüne dek mimarlığın toplumsallığını tartışmakta dışarıda ya da çeperde kalan süreçlerin odağa alındığı çalışmaları teşvik ederek söz konusu eleştiri hattını gündelik ve güncel zamansal etkenler içerisinden gözlemletmeye ve sürdürmeye de katkıda bulunabilir.

Authors' Contributions

There is a single author in this paper who contributed 100%.

Competing Interests

There is no potential conflict of interest. Single-author submission was approved by the thesis advisor.

Ethics Committee Declaration

Ethics committee approval is not required.

KAYNAKÇA

Allen, S. (2010). Field conditions. In A.K. Sykes (Ed.), *Constructing a new agenda: Architectural theory 1993-2009* (pp. 116-133). Princeton Architectural Press.

Awan, N., Schneider, T., & Till, J. (2011). *Spatial agency other ways of doing architecture.* Routledge.

Bourdieu, P. (2015). *Pratik nedenler* (H.U.Tanrıöver, Çev.). Hil Yayın.

Brown, T. (2009). *Change by design.* Harper Collins Books.

Carpo, M. (2017). *The second digital turn: Design beyond intelligence.* The MIT Press.

Doucet, I., & Cupers, K. (2009). Agency in architecture: Reframing criticality in theory and practice. *Footprint,* 4, 1-6.

Fraser, M. (Ed.). (2013). Introduction. *Design research in architecture* (pp.1-14). Ashgate Publishing.

Frichot, H. (2017). *Mimarî teorinin ölümü ve diğer kuruntular üzerine* (G. Yeşildağ, Çev.). Sub Yayımları.

Gribat, N., & Meires, S. (2017). A critique of the new 'social architecture' debate, moving beyond localism, developmentalism and aesthetics. *CITY, 21*, 779-788. https://doi.org/10.1080/13604813.2017.14121999

Gürkan, G. (1968). Ülkemizde mimarlık nerede duruyor? *Mimarlık Dergisi, 58,* 19-20.
 http://dergi.mo.org.tr/dergiler/4/377/5541.pdf (29.09.2021).

Hill, J. (2013). Design research: The first 500 years. In M. Fraser (Ed.), *Design research in architecture* (pp. 15-34). Ashgate Publishing.

Kennedy, N. F. (Ed.). (2012). Mimarlığı sosyolojik olarak anlamak. *TMMOB Mimarlar Odası Ankara Şubesi Dosya, 30,* 1-6. http://www.mimarlarodasiankara.org/dosya/dosya30.pdf (20.03.2019).

Latour, B. (2005). *Reassembling the social.* Oxford University Press.

Latour, B., & Yaneva, A. (2014). Bana bir silah verin, tüm binaları yerinden oynatayım: Mimarlığa bir aktör-ağ-kuramı (ANT) bakışı. *Mimarlık Dergisi,* 378.
http://www.mimarlikdergisi.com/index.cfm?sayfa=mimarlik&DergiSayi=392&RecID=3438 (01.04.2021).

Layder, D. (2013). *Sosyal teoriye giriş* (Ü. Tatlıcan, Çev.). Küre Yayınları.

Lefebvre, H. (2014). *Mekânın üretimi* (I. Ergüden, Çev.). Sel Yayıncılık.

Lepik, A. (2010). *Small scale big change. New architectures of social engagement.* MoMA + Basel: Birkhäuser GmbH.

Mitchell, W. J. (2017). Sınırlar/ ağlar. İçinde A.K. Sykes (Ed.) ve G. Akyürek (Çev.), *Yeni bir gündem inşa etmek mimarlık kuramı 1993-2009* (ss. 211-228). Küre Yayınları.

Oosterman, A. (2008). A profession apart. *Volume: Unsolicited Architecture, 14.*

Rabinow, P. (2012). Michel Foucault ile söyleşi: mekân, bilgi ve erk. *TMMOB Mimarlar Odası Ankara Şubesi dosya, 30*, 11-18. http://www.mimarlarodasiankara.org/dosya/dosya30.pdf (20.03.2019).

Ritzer, G. (2007). Can globalized commercial architecture be anything but highly McDonaldized? In S. Lee & R. Baumeister (Eds.), *The domestic and the foreign in architecture* (pp. 123-145). 010 Publishers.

Ritzer, G. (2011). *Modern sosyoloji kuramları* (H. Hülür, Çev.). De Ki Basım Yayım.

Ritzer, G. (2017). *Toplumun McDonaldlaştırılması* (A. E. Pilgir, Çev.). Ayrıntı Yayınları.

Spatial Agency. (t.y.). *About*. https://www.spatialagency.net/ (14.09.2021).

Tanyeli, U. (2017). *Yıkarak yapmak anarşist bir mimarlık kuramı için altlık.* Metis Yayıncılık.

Tapie, G. (2018). *Çağdaş yaşamortamın sosyolojisi* (A. Tümertekin, Çev.). Janus Yayıncılık.

Tschumi, B. (2018). *Mimarlık ve kopma* (A. Tümertekin, Çev.). Janus Yayıncılık.

Turğuter, E. A., & Evren, M. K. (2019). Sosyal teoride dualiteleri aşma çabası: Giddens, Bourdieu, Layder. *Universal Journal of History and Culture, 1*(1), 33-45.

Görsel Kaynakçası

Görsel 2. Ritzer, G. (2011). *Modern sosyoloji kuramları* (H. Hülür, Çev.). De Ki Basım Yayım, s.371. Ve aynı kitabın İngilizce dilindeki orijinal basımı da incelenerek yazar tarafından aslı gibi oluşturulmuştur.

Görsel 3. Gürkan, G. (1968). Ülkemizde mimarlık nerede duruyor? *Mimarlık Dergisi, 58,* 20. http://dergi.mo.org.tr/dergiler/4/377/5541.pdf (29.09.2021). Ve yazar tarafından aslı gibi yeniden oluşturulmuştur.

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Research Article

Yeniden hayatta: Mimarlıkta "kuram-sonrası"na dair bir kartografi

Alive again: A cartography for "post-theory" in architecture

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Özet

Güncel mimarlık kuramının önemli gündemlerinden biri kuram-sonrası tartışmalarıdır. Kuram-sonrası, kuramın hayatı düşey bir hiyerarşi içinde örgütlemeye çalıştığını vurgular. Ancak günümüzde mimarlık pratiği, bu yukarıdan aşağı yaklaşımı olanaksız kılan, dinamik, hızlı, değişken, büyüyen ve adeta canlı gibi davranan bir dünyada gerçekleşmektedir. Dolayısıyla hâlihazırda kuram-sonrasıdır. Mimarlık kuramının özerklik, eleştirellik, öncülük gibi vurguları terk edilmekte, mimarlığın oluşlar ile birlikte yeni kendilikler edinebilmesinin yolları tartışılmaktadır. Ancak kuram-sonrasının ima ettiği radikal kopuş vurgusuna rağmen, canlılık, hayatın bir dizi mekanik sistem olarak anlaşıldığı kavrayışlarla, mekanizmanın ötesinde bir bütünlüğü işaret eden organizma vurguları ile ya da enformasyon ile ilişkili bir organizasyon düşüncesi ile mimarlık kuramlarının sıklıkla başvurduğu bir argümanlaştırma biçimini belirtmektedir. Bu yüzden bu çalışma, kuram-sonrasının canlılık söylemlerini nitel bir araştırma örüntüsü içinde, eleştirel bir değerlendirmeye tabi tutmayı amaçlamaktadır. Çalışmada, bu söylemlerin mimarlık kuramının geleneksel biçimleri ile kurduğu bağlantıları işaret eden kartografik bir strateji izlenmektedir. Başka çabalarla geliştirilebilecek; canlılık söylemleri ve bu söylemlerin ilişkilendiği yönetimsel alanı eleştirel bir biçimde sorgulamaya açabilecek metinsel bir harita öngörülmektedir. Araştırmanın sonucunda, kuram-sonrasının radikal bir kopuş vurgusuna rağmen, kuramın geleneksel biçimleriyle kurduğu bir dizi süreklilik tartışmaya açılmaktadır. Bu tartışmayla; kuram-sonrasının "canlılık" söylemlerinin, temelde düşünmenin (ve kuramın) sonunu ilan etmekten ziyade, kuramın hayat ile ilişkisini yeniden sorgulamaya çağıran bir girişim olarak anlaşılabileceği vurgulanmaktadır.

Anahtar Kelimeler: Kuram-Sonrası, Eleştirel-Sonrası, Organizma, Mimarlık Kuramı, Kendilik

Abstract

One of the most important topics of recent architectural discourse is post-theory debates. Arguments in favor of the post-theory claim that the traditional theory attempts to organize the world from above. However, today's architectural practice operates in a practically alive world. Top-down hierarchies of the theory are not viable to sustain in the present. Thus, architecture today is conceived to be in a post-theoretical state. Novel possibilities for selfhood definitions within these becoming processes are emphasized. However, even though the post-theory discourse implies a radical break, vitality has been a crucial part of architectural theories. From mechanist understandings to organizational conceptions of life, vitality is a frequently referred term in architecture. Thus, this study follows a pattern of qualitative inquiry and attempts to provide a critical reading on post-theory discourses on life. The study employs a cartographical strategy to trace the discursive connections of vitality in architectural thought and charts a textual map open to being expanded. The study concludes that post-theory operates within the boundaries of a specific conception of vitality. From this perspective, rather than marking a death, post-theory discourses invite theory back to the discussion to question the relationship between theory and life.

Keywords: Post-Theory, Post-Criticality, Organism, Architectural Theory, Self

Extended Abstract

Introduction: Culturally upheld position of theory in architecture is an ongoing matter of debate in recent architectural discourse. The way theoretical architectures operate is being criticized, as they posit a limiting attitude toward a rapidly changing, growing, self-organizing, emerging, and becoming world of today's practice. While the architectural discussions continue today, instead of trying to define the rules of behavior for the world from above, actors in the field have to implement bottom-up strategies. Intelligence rather than knowledge is used to position itself in the increasingly competitive, large, ever-changing networks of today's market conditions. Theoretical attitudes which constituted the mainstream discussions of architectural media are being rejected in favor of new capacities within the networks of capitalist production. The conceptual inquiry that theoretical architecture emphasizes, such as "autonomy", "criticality", "utopianism", "avant-garde" holds a firm belief that architecture can sustain a critical distance from alienating forces of capitalism. However, post-theory argues that architecture today only focuses on what is practically there to transform reality into something different. Criticisms of post-theoretical positions in architecture problematize this rejection and its ethical implications. Thus, the debate is interpreted as a shift in the perception of architecture's selfhood. As the critical, autonomous, utopian and, avant-garde architecture of the past operated within a definition of architecture's selfhood in which conscious human architectural activity has a potential to separate itself from general forces, arguments for post-theory attempts to re-define and dissolve this selfhood in an ontology of becoming. Thus, from the perspective of post-theory, architecture today has no stable identity, no essence to produce this identity from, but rather is understood as something that produces novel identities and innovates through acting in a practically alive world.

Purpose and scope: The study problematizes how post-theory conceptualizes vitality from a historical perspective. In its scope, the study evaluates key articles of post-theory arguments and attempts to problematize how these arguments refer to life beyond the theory's pre-defined knowledge. The study explores how this alive, growing, becoming conceptions of life already had strong connections with the traditional forms of architectural theory long before post-theory employed them. From the duality between the "mechanism" and "organism" to informational conceptions of life, an architecture that self-organizes according to vital forces provides a line of thought already present in architectural theory. In order to conceptualize a life that is resistant to definitions of "theory from above", arguments for the post-theoretical, post-critical, post-vanguard positions fall back into a broad and complicated history of theorizing life. Thus, the post-theoretical way of referring to life as a legitimizing argument into a compatible line of thought with traditional theory, even though arguments of post-theory imply a radical break with contemporary architectural thinking. The study aims to expand the knowledge about referring to life as a legitimizing argument in architectural theories. Within this context, post-theoretical argumentation about life does not imply the end of theorizing or thinking but rather opens new grounds for theoretical inquiry.

Method: The study, following a qualitative mode of inquiry, provides a critical reading of post-theoretical discourses of life. It employs a cartographical strategy to trace the discursive connections of post-theoretical understanding of life and vitality within traditional forms of architectural thought. By doing so, it attempts to problematize the discursive formations of life and the operational field that these discourses govern. Without claiming to be an exhaustive historical account, this study's cartographical approach renders a map of discourses about life in architecture theory open to be expanded, transformed, and reconnected with further research and differentiating interpretations.

Findings and conclusion: Post-theoretical claims in architecture refer to an organizational, information-based, and networked conception of life. This conception of life can produce new, unstable identities by situating architectural making/doing into complex, unpredictable environments. Thus, the traditional "theoretical architectures" are conceived as an act of reduction that limits architecture's potential to innovate in a rapidly changing, undefined environment. If theory-making, generally, attempts to preserve "essential" features of architecture in an alienating environment, post-theory arguments embody an anti-essentialist position. In the post-theoretical discourse, architecture has no essential feature to sustain, so concepts such as criticality or autonomy become obsolete. For the post-theory, architectural practices produce novel, emergent forms of organization in collaboration with various agents outside architecture. Architecture, then, self-organizes its practices concerning its environment and seeks niches that can provide new means for architectural operation. This can be interpreted as a shift in architectural thinking. However, conceiving life in such terms refers to an ongoing crisis in theoretical inquiry. Mechanist understandings transform life into systemic relationships long before the information-based conception of life. And 19th century attitudes that focus on the organic unity of life beyond mechanist reduction have simultaneous counterparts in architectural thinking. This argumentation follows a similar discursive pattern to post-theory objection to theory's reduction of architecture; in the sense that they refer to a life that escapes reductive formalization. In addition, the organizational sense of referring to life, i.e. informational patterns, has its roots in the cybernetic thinking of the 1950s. Long before post-theoretical objection, the architectural theory attempts to incorporate these ideas with the advent of network technologies. Even the actors of architectural theory that post-theory criticized attempt to relate with this networked conception of the life in their projects, just before post-theory debates. In

conclusion, this conception of life post-theory does not imply the end of architectural theory and thought; instead, it can be interpreted to invite theory back to the field to think further about the relationship between life and architecture.

Keywords: Post-Theory, Post-Criticality, Organism, Architectural Theory, Self

GİRİŞ

Kuram, hayat ile kurduğu gerilimli ilişkide çeşitli dönüşümleri yakalar ve sonlar ilan eder. Erken Aydınlanmadan beri, içinde yaşanılan toplumun, hatalı kabuller ve yargılar nedeniyle doğadaki kökenlerinden uzaklaştığına, bu yüzden toplumsal hayatın bir kendini aldatma hali olduğuna inanılır. Bu tür bir kendini aldatmanın ötesine geçilebilirse eğer, entelektüel, pratik ve ahlakî bir dizi kazanıma erişileceği düşünülegelir. Bu yüzden, hayatın süregiden akışları içinde maskelenmiş, ilk bakışta görünür olmayan, fakat hayatın akışını, ilerleyişini, serpilip büyümesini koordine ettiği düşünülen bir dizi ilişki bulunduğu varsayılır. Bu saklı ilişkileri kavramaya, tanımlamaya, ayrıştırmaya yönelik çabalar, Batı Kültürü'nde ayrıcalıklı bir konumda tutulmuştur. Lionel Trilling (1973: 141-142) *Sincerity and Authenticity* isimli çalışmasında, Batı'da toplumsal koşullar tarafından perdelenmiş, bozuma uğratılmış, geçersiz kılınmış, ortaya çıkarılması gereken bir hakikat bulunduğuna yönelik bu düşüncenin yaygınlaşmasını, kültürel bir eğilim olarak değerlendirmektedir. Trilling (1973) hakikati açığa çıkarmaya yönelik bu entelektüel ve ahlakî eğilimin izlerini, 18. yüzyıl Fransa'sındaki öncüllerinden, 20. yüzyılın ikinci yarısında üstlendiği geniş etki alanına kadar takip etmekte ve bu maske düşürme eğiliminin edebiyat, psikoloji, siyaset felsefesi gibi farklı alanlarda ürettiği kapsamlı karşılıkları tartışmaya açmaktadır. Bu kültürel eğilimin mimarlık bilgi alanları içinde de 18. yüzyıldan itibaren etkili olmaya başladığı ifade edilebilir. Söz gelimi David Watkin (1977: 1-14) *Morality in Architecture: Development of a Theme in Architectural History and Theory from the Gothic Revival to the Modern Movement* isimli çalışmasında bu kültürel eğilimin izlerini tartışmaya açmaktadır. Watkin (1977: 14) mimari biçimin meşruiyetinin strüktür ya da çağın ruhu türü vurgular aracılığıyla, saklı bir hakikatin dürüst bir biçimde ifade edilmesinde yattığını savlayan bu ahlakî temaya dikkat çekmektedir. Kıta felsefesi, "hakikat" kavramına dair kapsamlı bir eleştiri yürütmekte olsa da bu dürüst ifade teması mimarlık bilgi alanlarında halen etkisini sürdürmektedir.

Ancak güncel mimarlık mecralarında gündeme gelen kuram-sonrası tartışmaları ile kuramın hayat üzerinde yerleştirildiği bu ayrıcalıklı konum geniş çaplı bir sorgulamaya tabi tutulmaktadır. Kuram, kendi meşruiyetini teşkil eden, hayatın işleyişine dair kabulleri anlama ve bu kabullerin ötesine geçme arzusu nedeniyle, kendi gerekliliğini yadsır bir hale bürünmektedir. Kuram-sonrası, kuramın olguların altında yatan hakikati kavrama ve ifade etme çabasına dair bir paradoksu dile getirmektedir. Temelde bu süregiden sorgulama yalnızca mimarlık bilgi alanını değil; sosyoloji, kültürel çalışmalar, film çalışmaları gibi farklı bir dizi beşerî bilim alanını da ilgilendiren, kapsamlı bir sahaya gönderme yapmaktadır. Söz gelimi Frichot (2017: 17) "Symploke" isimli karşılaştırmalı edebiyat dergisinin çıkardığı "Theory Trouble" isimli sayıya atıfta bulunarak, Speaks ise (2002) edebî eleştiri alanında 1980'lerde gerçekleşen kuram-karşıtı girişimlere referans vererek mimarlık gündeminin bu saha ile ilişkisini vurgulamaktadır. Terry Eagleton (2004) "After Theory" isimli kitabında, kuramın sonu tartışmalarının bu kapsamlı etki alanını, post-modernizm ile ilişkilendirmekte ve kuramın ölümünün, kültürel kuramların daha önceleri peşinde oldukları sınıfsal eleştiri ajandasını terk etmesi ile ilişkili olduğunu savlamaktadır. Buna göre kuram sonrası bir akademide, doğrudan gündelik hayat ile ilişkili konular, siyasi gündemlerden ayrıştırılarak akademik bilgi üretimi süreçlerinin parçası haline gelmektedir.

Pek çok disiplini etkisi altına alan bu kuram-sonrası gündem, ortak bir biçimde, tüm dünyada baş gösteren siyasi, ekonomik, teknolojik, yönetimsel dönüşümlerin; disipliner sınırlar içinde baskın halde bulunan büyük kuramsal projelerin ve eleştirel eğilimlerin çeperlerini zorladığını vurgulamaktadır. Mimarlık medyasında mimarlık kuramının sonuna ve sonrasına yönelen tartışmalar da, bu daha kapsamlı hattın bir uzantısını belirtmektedir. Mimarlık ortamında da, alışılageldiği hali ile mimarlık kuramının; küreselleşmenin getirdiği yeni pazar dinamikleri ya da yeni teknolojik aracılar karşısında etki alanını yitirdiği ifade edilmektedir. Michael Speaks (2002) *Theory was interesting... Now we have work: no hope, no fear* başlıklı makalesiyle, mimarlıktaki kuram-sonrası bu duruma açık bir ifade kazandırmıştır. Speaks (2002) özellikle 1970'lerden itibaren mimarlık ortamındaki ana-akım tartışmaları karakterize eden ve metinde Peter Eisenman, Bernard Tschumi gibi aktörlerin pratikleri ile örneklenen "Kuramsal Mimarlıklara" karşı bir eleştiri yürütmektedir.

Speaks'in eleştirisi, kuramın pratikle kurduğu paradoksal bir bağlantı üzerinden biçimlenmektedir. Speaks'e (2002: 209) göre kuram her zaman pratiğin beklenmedik karmaşıklığı ile ilişkilidir, ancak pratiği yukarıdan aşağı bir biçimde örgütlemeye çalışan bir indirgeme ilişkisini tarif ettiği anda, kuramsal olma iddiasını kaybetmekte ve edebî eleştirinin bir biçimine dönüşmektedir. Diğer taraftan, pratik için sonuçlar barındırma çabasını üstlenirse, artık kuramsal da olamamaktadır; zira kendini pratiğin üstünde konumlandırma iddiasını yitirmektedir (Speaks, 2002: 209). Speaks (2002: 210) bu argümanını, 1970'lerden beri Amerika merkezli mimarlık kuramının, sermayenin tarihsel koşulları ile kurduğu bağlantılara dikkat çekerek desteklemektedir. Speaks'e göre (2002: 210) kuram, çok daha kapsamlı sorunlarla ilgilenen kıta felsefesinin Amerikan akademilerine ithal edilmesi ve hızlı bir biçimde mimarî nesne üretim sistemlerine eklemlenmesidir ve bu durumun 1960-1980 yılları arasında, mimarlık pratiği için gerçek ve üretken sonuçları olmuştur. Ancak günümüzde mimarlıkta kuramın böyle bir gücü kalmamıştır (Speaks, 2002: 209). Bu yüzden mimarlık, dünyayı soyutlayarak pratiğe kurallar biçen, indirgemeci bir mimarlık kuramından sıyrılmakta; dünyanın nasıl işlediğine dair manifestolar yazarak harekete geçen öncü girişimlerden kurtulmaktadır. Mimarlık, artık hız ve inovasyon odaklıdır; önce yapıp, sonra düşünen bir kuram-sonrası durumun içindedir (Speaks, 2002: 212).

Speaks (2002) makalesinin alt başlığında; *Against Theory: Literary Studies in New Pragmatism* isimli derleme kitapta yürütülen kuram-karşıtı tartışmaların "kuram umudu" ve "kuram korkusu" kavramlarına atıfta bulunarak "umut yok, korku yok" yazmaktadır. Bu ifade Deleuze'ün (2001) "Denetim Toplumları Konusunda Bir Ek" isimli makalesinde de yer almaktadır. Deleuze (2001) metninde, Foucault'nun analiz ettiği kapatma ve mekânsal ayrıştırma üzerinden işleyen disiplin toplumlarının yerlerini denetim toplumlarına bıraktığını tartışmaktadır. Denetim toplumları, disiplin toplumlarının özneleri gruplayan, bariyerlerle kapatan ve disipline ederek özdeşleştiren diyagramlarının aksine; her bir bedene özgüdür ve bedenlerin şeylere erişimini anlık olarak denetleyen bir mantık üzerine kuruludur. Başka bir ifadesi ile mekânsal olarak ayrıştırarak disipline etmeye çalışan 19. yüzyıla ait organizasyonel mantık; yerini mikro-ölçeklerde gerçekleşen, hızlı ve anlık enformasyon işleme süreçlerine bırakmaktadır (Deleuze, 2001).

Deleuze (2001), tecrübe edilen bu yönetimsel dönüşümün karşısında umuda ya da korkuya yer olmadığını vurgulamakta, yalnızca bu durumla mücadele etmek için yeni silahlar devşirilmesi gerektiğini savunmaktadır. Speaks'in (2002) makalesinde tartışmaya açtığı kuram-sonrası bağlam da, tüm dünyaya yayılan bu yeni organizasyonel mantığın, mimarlık bilgi alanı üzerindeki etkilerini sorunsallaştırmaya yönelik bir girişim olarak yorumlanabilir. Ancak Deleuze'ün düşünceleri ile Speaks'in belirttiği kuram-sonrası durum arasında kritik bir fark bulunmaktadır. Speaks (2002: 212), Deleuze düşüncesinin hızı ve yeniyi üretme konusunda barındırdığı imkânları teslim etmekte, ancak Deleuze'ün ticarîlik kaygısını Avrupa kaynaklı bir gelenekçilik olarak değerlendirerek eleştirmektedir. Speaks'e (2002: 212) göre Deleuze düşüncesi, tam da bu kaygı nedeniyle, eyleme geçmenin kapitalist akışlar içinde barındırabileceği imkânları keşfetmek konusunda yetersiz kalmıştır. Speaks (2002: 212) mimarlığın eylem alanının, 2000'li yılların başından itibaren "tek sabitin değişimin kendisi olduğu" bir oluşlar dünyasında "değişim yöneticiliği" olduğunu vurgulamıştır. Bu argümanlar göz önünde bulundurulursa mimarlıkta kuram-sonrası tartışmaları, kararlı türden bir kendiliğe sahip, özerk, dünya ile ilişkilerini iradî bir biçimde kuran mimarlık kavrayışlarının sonunun ilan edilmesi şeklinde yorumlanabilir. Speaks (2002: 212) kapitalist üretimin 20. yüzyıl sonunda tecrübe ettiği organizasyonel değişime yaslanan bir gerçekçiliği vurgulamakta; söz gelimi pazarlama danışmanlarıyla, stilistlerle, reklam ajanslarıyla, grafik tasarımcılarla, şirket yöneticileriyle ve benzeri pek çok faille örülü, geniş şirket ağları içinde eyleme geçen UN Studio, FOA, Field Operations gibi mimarlık ofislerinin pratiğini, bu kuram-sonrası olanakların üretken örnekleri olarak tartışmaya açmaktadır.

Bu argümanlar ışığında, "kuram-sonrası" arayışının merkezî amaçlarından birinin, mimarlığın 20. yüzyılın ikinci yarısından bu yana kurmaya çalıştığı disipliner kendiliği, bir oluş ontolojisi içinde dağıtmak olduğu söylenebilir. Böylelikle bu kendiliği ortaya koyan ahlakî değer hiyerarşileriyle yolların ayrılması hedeflenir. Mimarlığın kuramsal ve eleştirel projeleri; kapitalist üretim pratiklerinin, toplumun dayatmalarının ve gereksinimlerinin nüfuz edemediği bir özerkliği ya da en azından ahlakî açıdan meşru bir mesafe kurmaya yönelik girişimleri barındırmaktadır. Pier Vittorio Aureli (2015: 41) *Az Yeterlidir: Mimarlık ve Asketizm Üzerine* isimli kitabında, bu mücadele ilişkisini asketizm (çilecilik) ile ilişkilendirerek tartışmaya açmaktadır ve asketizmi, iktidara hayat üzerinden bir direnç oluşturma pratiği olarak tanımlamaktadır. Mimarlıkta kuram-sonrasının, Aureli'nin teşhis ettiği, mimarlık kuramında kapitalizm karşıtlığı ile biçimlenen çileci eğilimin

aşılmasını talep ettiği çıkarımı yapılabilir. Bu çıkarıma göre kuram-sonrası, mimarlığı farklı biçimlerde harekete geçirme gücüne sahip tüm enerjileri ve akışları olumlar. Bu açıdan kuram-sonrası, disiplinin süregiden kendilik tanımlarını ortadan kaldırmaya yönelen bir "kader sevgisi"ni cisimleştirir.

Kuram-sonrasının kapitalizmin olanakları içinde harekete geçmeyi güçlü bir biçimde olumlayan argümanları, genellikle bu tavrın siyasi meşruiyeti sorgulanarak eleştirilmiştir. Mimarlıkta kuram-sonrası gerek Frankfurt Okulu eğilimli kültür eleştirilerinden, gerekse minör siyaset olanaklarını araştıran mimarlık kuramlarından yükselen bir dizi itiraz ile karşılanmıştır. Söz gelimi Martin (2017: 325) kuram-sonrası tartışmacılarının Deleuze'ün siyasi projesini "tanınmaz hale getirmek için çarpıttıkları"nı (2017: 325) ifade etmektedir. Van Toorn (2017: 292) ise kuram-sonrası tartışmasını, geç kapitalizmin "kentteki yegâne oyun" (2017: 325) haline gelmesi olarak değerlendirmektedir. Van Toorn'a (2017: 325) göre mimarlığın kapitalizmi terk etmesi imkânsız olsa bile, kapitalizm ve mimarlık arasındaki ilişki ahlâkî ve toplumsal bir sorunu belirtmektedir.

Bu çalışma ise, bu siyasi meşruiyet tartışmasının ötesine geçmeyi ve kuram-sonrası kavrayışlarının, kuramın geleneksel biçimleriyle kurduğu bir dizi ortaklığı görünür hale getirmeyi amaçlamaktadır. Kuram-sonrası tartışması mimarlığın bir disiplin olarak kendiliğinin; mekanik tanımlara direnen, bir oluş ontolojisi içinde yeniden tanımlanmasına yönelik bir girişimi belirtmektedir. Kuram-sonrası pozisyonlar, mimarlığın artık kararlı bir kimliğe, özerk bir bilgiye ya da iradî bir harekete geçme biçimine sahip olmadığını savlamaktadır. Mimarlık artık, hayata içkin ardıl bir dizi etkileşimin içinde, önceden tanımlanması, tariflenmesi, biçimlendirilmesi mümkün olmayan bir faillik türüne gönderme yapmaktadır. Kuram-sonrası, kuramı, özcülük, olumsuzlayıcı türden katı bir ahlâkçılık ve belirli tarihsel koşullar içinde geçerli olma gibi bir dizi suçlama içinde tanımlamaktadır. Ancak kuram-sonrası kendini hâlâ aydınlanma ve sonrasında ortaya konmuş, hayatın ve canlılığın işleme biçimine dair bir dizi kuramsal tema ile süreklilik içinde örgütlemektedir. Bu perspektiften değerlendirildiğinde vadedilen kuram-sonrası, gerçekten mimarlık kuramının sonunu ve sonrasını dile getiren yeni bir arayış değil, daha ziyade 19. yüzyıldan bu yana mimarlık kuramının merkezi bileşenlerinden birini belirten, hayat ve canlılıkla ilişkili kavrayışları yeniden tartışmaya çağıran bir bakıştır. Çalışma, kuram-sonrasının merkezinde tuttuğu, hayat ve canlılıkla ilişkili bu kavrayışların mimarlık kuramında farklı belirme biçimlerinin takip edilebileceği bir haritayı serimlemektedir.

YÖNTEM

Çalışma, kuram-sonrası tartışmalarının, kuramın erişimi dışında kalan bir hayata gönderme yapan söylemlerini sorun haline getirmeyi amaçlamaktadır. Zira dinamik, etkileşimli, süreçsel, ön tanımlara direnen bir hayat kavrayışı, mimarlık düşünceleri kapsamında sıklıkla başvurulan bir argümanlaştırma biçimini ortaya koymaktadır. Bu amaç doğrultusunda, çalışma kapsamında, kuram-sonrası tartışmalarının merkezî metinleri, nitel bir araştırma örüntüsü içinde vaka olarak ele alınmakta ve bu metinlerin hayata ve canlılığa gönderme yapma biçimleri eleştirel bir değerlendirmeye tâbî tutulmaktadır. Çalışmada, bu değerlendirme sonucunda teşhis edilen söylemsel biçimlenmelerin, mimarlık kuramındaki öncülleri ile bağlantılandırıldığı metinsel bir kartografi ortaya konulmaktadır. Bu kartografi çerçevesinde, hayatın bu türden kavranışlarına gönderme yapan söylemlerin birbirleri arasında barındırdığı bağlantılara odaklanılmıştır. Böylelikle kuram-sonrasına dair, bütüncül ve eksiksiz bir tarihsel perspektif ortaya konulduğu iddiası üstlenilmeden; kuram-sonrasının bu hayat söyleminin, geleneksel mimarlık kuramları ile kurduğu karmaşık ve kapsamlı ilişkiler görünür hale getirilmektedir.

Araştırmada takip edilen stratejiyi belirten kartografi kavramı, Deleuze'ün (2013: 43-63) Foucault monografisinde Foucault'yu bir "kartograf" olarak nitelediği bölümle ilişki içerisinde ele alınmaktadır. Deleuze (2013: 47), Foucault'nun, iktidarı, aşkın bir biçimde maddeyi dışarıdan biçimlendiren bir kuvvet olarak ele almak yerine söylemsel biçimlenmeler (söz gelimi ceza hukuku) ve söylemsel olmayan biçimlenmeler (hapishane ortamı) ile ilişkili halde, gündelik hayatta var olan bir mikro-fiziksel uygulamalar dizisi olarak değerlendirdiğini tartışmaktadır. Yani bir kralın tebaasını düzenlediği, yukarıdan aşağı, düşey bir hiyerarşi içinde kurulan bir örgütlenme yerine, hayatın içinden (Foucault için veba ya da cüzzam karşısında uygulanan stratejiler) beliren bir iktidar kavramsallaştırmasına gönderme yapmaktadır.

Deleuze (2013: 57-59), Foucault'nun dilsel yapılanmalar ile ortamın düzenlenmesi arasındaki bağlantıyı kuran bir "diyagram" teşhis ettiğini belirtmekte ve bu diyagramı bütün toplumsal alanı boydan boya kat ederken, kendine eklemeler ve çıkarmalar yapan bir ilişki türü olarak ele almaktadır. Deleuze'e (2013: 63) göre Foucault, bu dönüşümlerin bir haritasını ortaya koymaktadır. Bu nedenle, söylemsel biçimlenmelerin dağılma tarzlarını sorgulamaya yönelik eleştirel kartografiler, söylemler ve söylemlerin denk düştüğü yönetimsel alanı problemleştirmektedir. Braidotti, bu düşünceye paralel bir biçimde, *Eleştirel İnsanötesi Bilimler İçin Kuramsal Bir Çerçeve* isimli metninde, eleştirel düşünmenin, "bilginin üretimi ve dolaşımı içinde işleyen ve buna içkin olan iktidar ilişkilerinin kartografilerini çizerek çoğalan söylemlerin hızlanma eğilimini yavaşlattığını" (2021: 17) ifade etmektedir. Bu türden kartografiler, bilginin her zaman konumlu olduğunu vurgulayan bir epistemolojiyi cisimleştirmektedir. Bu yüzden kartografik değerlendirmeler, farklı bilme ve ifade etme biçimlerinin ortaya koyulabileceği bölgeleri işaret etmeyi amaçlayan eleştirel bir pratiği tarif etmektedir. Braidotti, kartografik yaklaşımın konumluluk üzerinden biçimlenen epistemolojisini, "dünyada ve şimdide demirlenmiş olmaktan dolayı, herhangi bir kartografik açıklama zorunlu olarak seçici, kısmi ve asla kapsamlı değildir" (2021: 18) yazarak vurgulamaktadır.

Bu çalışma özelinde de kartografi eleştirel bir strateji olarak değerlendirilmektedir. Kuram-sonrasının canlılık söylemleri ve bu söylemlerin denk düştüğü, kuramsal çabaya ve düşünme eylemine gönderme yapan yönetimsel alan, bir eleştiriye tâbî tutulmaktadır. Makalenin izleğinde, öncelikle kuram-sonrası tartışmalarının, kuram ve hayat arasındaki bağlantıyı ve bu hayat içinde eyleme geçme biçimlerini nasıl tanımladıkları serimlenmektedir. Bu tanımlamaların ilişkili olduğu bir dizi tarihsel paralellik ve ayrışma, tartışma konusu haline getirilmektedir. Ardından, kuram-sonrası tartışmalarının hayatı kavrama biçimleri ile yakın ilişkiler kuran, hayatın birbiri ile etkileşen enformasyonel-sistemler olarak kavranmasına dair bir dizi farklı tarih-yazımına işaret edilmektedir. Böylelikle, kuram-sonrası tartışmaların takip edilebileceği, süreklilikerin ve süreksizliklerin görünür hale gelebileceği ve canlılık ve kuramsal eylem ile ilişkili alternatif bağlantıların tarif edilebileceği eleştirel bir değerlendirme hedeflenmektedir.

Kuram-Sonrası İçin Bir Dizi Kartografi Girişimi

Kuram-sonrası tartışmalarının merkezindeki metinlerden biri, Robert Somol ve Sarah Whiting'in (2017) Perspecta'nın "Mining Autonomy" temalı 33. sayısında yayınladıkları, "Doppler Etkisi ya da Modernizmin Öteki Ruh Halleri Üzerine" başlıklı makaledir. Makale, mimarlıktaki disiplinerlik kavrayışları için alternatif bir soykütüğü ortaya koymakta ve nihayetinde özerk bir mimarlık pratiğinin yerine, "projektif pratikler" kavramıyla karşıladıkları bir harekete geçme biçimini önermektedir. Bu öneri, yazarların belirme (emergence) ve şeyleştirme (reification) arasında kurdukları bir karşıtlıkla açıklanmaktadır:

> *Şeyleştirme (reification), niteliksel deneyimin niceliğe negatif indirgenmesiyle ilişkilendirilirken, belirme (emergence) ardışık birikimin kendisinin yeni değerler üretimiyle sonuçlanabileceğini vaat eder. Dizinsel, diyalektik ve sıcak bir temsille ilişkilendirilen eleştirel projeye alternatif olarak bu metin projektiflik için diyagramatik, atmosferik ve serin edimle bağlantılı alternatif bir soykütüğü geliştirmektedir.* (Somol ve Whiting, 2017: 180)

Dolayısıyla Somol ve Whiting (2017:180) için mimarlık kuramının eleştirellik ve özerklik girişimleri bu karşıtlığın şeyleştirme kefesinde kalır. Projektiflik ise mimarlık disiplinindeki belirme (emergence) olasılıklarına ilişkindir. Metin "dizinden diyagrama", "diyalektikten dopplere" ve "sıcaktan serine" alt başlıklarında bu karşıtlığı detaylandırmaktadır. Eleştirellik kavramı metinde, K. Michael Hays'in Barselona Pavyonu üzerine yürüttüğü tartışma üzerinden tariflenmekte, özerklik ise Eisenman'ın Dom-ino Evi sorgulaması üzerinden açıklanmaktadır. Somol ve Whiting (2017: 181), bu iki tartışmanın medya teknolojik yapısına vurgu yapar. Buna göre, Hays'in ve Eisenman'ın okumaları, disiplinin kimliğini fotoğraflar ya da çizimler gibi medya teknolojileri ile sürekli yeniden-üretilen ve bu yeniden-üretimler aracılığı ile kuramsallaştıran bir edimsellik barındırır (Somol ve Whiting, 2017: 181). Bu durum, Somol ve Whiting (2017: 181) tarafından, hayat ve mimarlık kuramı arasında kurulacak daha doğrudan bağlantıların bir endişe kaynağı haline gelmesi olarak değerlendirilir. Somol ve Whiting, makalenin ikinci alt başlığında, fizikteki dalga girişimleri ile ilişkili olan Doppler etkisini bir metafor olarak kullanmaktadır. Disipliner özerkliğin mimarlığın dış koşullarını olumsuzlayarak dışarıda bırakan tavrının yerine, tıpkı ses dalgalarının gözlemcilerin pozisyonuna göre farklı bir biçimde algılandığı metaforun belirttiği gibi, bu olgularla farklı türden ilişkiler kuran yeni sentezlerin üretilebileceği bir mimarlık kavrayışı ortaya koyulmaktadır (Somol ve Whiting, 2017:

183). Üçüncü karşıtlık ise, projektif mimarlıkların dispiner özerklik eleştirisine geri dönmekte ve dispiner özerkliği Marshall McLuhan'ın medya kuramından ödünç alınan "sıcak-serin" metaforu ile tartışmaya açmaktadır. Metafora göre, bir mecra kendi içeriğini önceden tanımlar. Mecra, mesajı okuyucunun katılımına olanak bırakmayacak bir biçimde biçimlendiriyorsa, yani ne kadar yüksek-tanımlıysa o kadar sıcaktır (McLuhan, 2003: 24). Örneğin fotoğraf, aktardığı görsel mesajı aşırı-tanımlaması nedeniyle yazıya göre daha sıcak bir mecrayı belirtir. Yazıyı okuyan, metni kendi zihninde görselleştirerek, mesaja, bir anlamda, katılabilir. Bu nedenle, medya kuramından ödünç alınan "sıcak-serin" metaforu, mimarlık kuramının temsil üzerinden işlemekte olan indirgemeciliğini anlaşılabilir kılan bir araca dönüşmüştür. Bu metafora göre Eisenman'ın ve Hays'in kuramları, kendi mesajlarını, "medya-yoğun" olmaları nedeniyle önceden tanımlayıp hayatın karşısına koymaktadır. Somol ve Whiting (2017: 186), bu aşırı-ısınmış, yüksek-tanımlı kuramsal mimarlıkların yerine, "serin" bir projektiflik önermektedirler. Somol ve Whiting'in (2017: 184) metninde, "şeyleştirme" ve "belirme" arasında kurduğu medya teknolojik karşıtlığı, "mekanik" ve "organik" kavramları ile karşılamak da mümkün görünür. Bu okumayı mümkün kılan kavrayış metne şu şekilde sirayet etmektedir:

> Doppler özerklik olarak disiplinerlik anlayışını, performans ve pratik olarak disiplinerlikle değiştirir. İlkinde bilgi ve form ortak kurallara, ilke ve geleneklere dayalıdır. İkincisinde disiplinin sabitlenmiş bir veri ya da bütünlük olmak yerine, Foucault'nun 'bir takım özerk ancak bağımsız olmayan alanlar gibi, planlanmamış ve yönetilemeyen, canlı bir organizma ya da söylemsel bir pratik' olduğu, daha Foucault'cu bir disiplinerlik kavrayışı geliştirilmiştir. (Somol ve Whiting, 2017: 184)

Argümanlar değerlendirildiğinde, metinde özerkliğin ve eleştirelliğin, hayatın tüm bileşenlerinin tek bir kanala yoğunlaşarak aşırı-indirgenmesi ile kurulan "mekanik" bir ilişkilenme türü olarak anlaşıldığı; projektifliğin ise hayatın tüm canlılığı içinde "organik" bir biçimde serpilen, büyüyen "performatif" bir mimarlık yapma biçimine gönderme yaptığı yorumu yapılabilir. Ancak mekanizma ve organizma kavramlarıyla ifade edildiğinde, kuram sonrasının merkezindeki bu sorunsallaştırma biçimi, mimarlık kuramının hiç de yabancı olmadığı tarihsel bir problemin, bu sefer mimarlığın disipliner sınırları sorun edilerek tekrarlanması anlamına gelmektedir. Zira "organizma" ve "mekanizma" arasında kurulan karşıtlık, Batı merkezli kuramlar içinde önemli bir tartışmayı belirtmektedir. Somol ve Whiting'in tartışması, bu perspektiften bakıldığında, mimarlık kuramının sıklıkla başvurulan açıklamalarından biriyle süreklilik arz etmekte, 19. yüzyıldan beri Romantizmin etkisiyle biçimlenmiş bir organizmacılıkla paralellikler taşımaktadır. Söz gelimi Adams (1957: 47) Romantizmin, biçimin kendisini "dışarıdan mekanik bir biçimde giydirilen bir olgu" olarak değil, içeriden "organik bir biçimde büyüyen bir yapılanma" olarak kavradığını belirtmekte ve bu fikrin 19. yüzyıl boyunca pek çok sanat alanını sarstığını ifade etmektedir. Bu karşıtlık, modern mimarlığın en sık tekrarlanan dictumlarından birini doğurmuştur. Söz gelimi Louis Sullivan'ın doğadaki biçimlerin her zaman kendi hayatlarını ifade ettiğini söyleyen işlevsel ifadeciliğini ya da Frank Lloyd Wright'ın organik mimarlığı; mimarlığı, mimarî biçimin yaşamı dürüst bir biçimde ifade etmesi olarak kanonlaştıran bu dictumla ortak bir kökene yaslanmaktadır. Kısacası, mimarlığın hayata içkin süreçselliği içinde kendi disipliner sınırlarını örgütlemesini talep eden "projektiflik" kavramı ile romantizmin organik bütünlüğü vurgulayan kavrayışları arasında düşünce düzleminde paralellikler bulunmaktadır. Bu paralellik "organik" ile "belirme" (emergence) kavramları arasındaki akrabalık vurgulanarak detaylandırılabilir.

"Belirme" (emergence) hayatın medya-teknolojik bir biçimde yeniden tanımlanmasına ait bir kavramdır ve 19. yüzyıl dirimselciliğinin organizmalara ait bütünlüğü anlamak için kullandığı, ruh benzeri, doğrudan deneyim dışında olan aşkınsal kavramları, birbirleriyle etkileşime geçen sistemlerin enformasyonel akışları içinde ortaya çıkan, beklenmedik bir dizi etki olarak açıklamakta kullanılmaktadır. Bu açıdan "belirme" kavramı hayatın tümünün enformasyonel etkileşimlere indirgendiği bir canlılık kavrayışına gönderme yapmaktadır. Söz gelimi, belirme kavramı ile karınca yuvalarının karmaşık düzenliliği, her bir karıncanın birbiri ile etkileşimindeki iletişimsel sürecin sonucunda ortaya çıkan beklenmedik bir etki olarak açıklanır. Bu akrabalık, Somol ve Whiting'in metninin (2017) ortaya koyduğu problem için önemli bir tezatlığı da beraberinde getirmektedir. Mimarlıkta eleştirel kuramın ve özerkliğin medya-merkezli işleyişini indirgemecilikle niteleyerek ortaya konulan alternatif, tüm hayatın medya teknolojik enformasyonel sistemlere indirgendiği açıklamalara başvurularak serimlenmektedir.

"Organizma" kavramı ve kuram-sonrası metinleri arasındaki paralellikler yalnızca bu metinle sınırlı değildir. Söz gelimi Speaks (2017), *Tasarım Zekâsı* isimli, 11 Eylül sonrası döneminin reel-politiğine göndermelerle

dolu makalesinde, dünyada artık "bilginin" yerini "zekânın" aldığını ifade etmekte; dünyayı önceden tanımlayıp harekete geçen öncü (avant-garde) bir mimarlığın yerine, hâlihazırda orada olanı başka biçimlerde harekete geçiren, bir dizi öncü-sonrası (post-vanguard) pratiği tartışmaya açmaktadır. Bundan böyle, sürekli değişmekte olanı, belirsiz ya da henüz şimdi belirmiş olanı hızlıca kavrayabilme, doğruluğu şüphe altında olan "istihbaratı" ayırt edip kullanabilme becerisi, durum hakkında önceden tanımlanmış türden bir bilgiye sahip olmaktan çok daha önemlidir. Speaks şöyle yazmaktadır:

> *Eğer felsefe yirminci yüzyıl öncülerinin, kuram geç yirminci yüzyıl öncülerinin başat entelektüel malzemesi ise, zekâ da yirmi birinci yüzyıl öncüler-sonrasının (post-vanguards) başat entelektüel malzemesi haline gelmiştir. Öncü pratikler önceden belirlenmiş olan fikirlere, kuram ve kavramlara dayalıyken, öncü-sonrası pratikler herhangi bir fikir, kuram ya da kavram tarafından önceden tahmin edilemeyen yenilikler için fırsat arayışında olmalarıyla daha girişimcidirler.* (Speaks, 2017: 195-196)

Bu açıdan Speaks, bilginin yalnızca ön tanımlı bir işlevi olduğunu savlıyor gibi görünmektedir. Bu noktada, bilginin hayatın önceden belirlenmiş bir indirgemesi olduğuna ve zihne mekanik tekrarlarla aktarılması gerektiğine yönelik yaklaşımların 19. yüzyıldan beri süregiden bir eleştiri altında olduğuna dikkat çekmek gerekir. Söz gelimi Jacques Ranciere'in (2020) *Cahil Hoca: Zihinsel Özgürleşme Üzerine Beş Ders* isimli kitabındaki anlatıya göre eğitmen Joseph Jacotot; bilginin önceden tanımlandığı, bu tanımı bilen bir eğitmen tarafından, öğrenciye açıklama yoluyla aktardığı eğitim modellerinin dışına çıkan bir dizi deney gerçekleştirmiştir. Örneğin; Hollanda'da, kendisinin Hollandaca, öğrencilerinin de Fransızca bilmiyor olması nedeniyle bir dil bariyeri ile karşılaşmıştır (Ranciere, 2020). Bu bariyerin aşılması için öğrencilerine -kendisi Hollandaca bilmeden- Fransızca "öğretmeye" karar vermiş, onları Fenelon'un *Telemak'ın Maceraları* kitabının iki dilli baskısı üzerinde, kendi başlarına çalışmaya teşvik etmiştir (Ranciere, 2020). Bu deneylerde hocanın pozisyonu artık önceden tanımlı bilgiyi açıklamak üzerinden kurulmamaktadır. Hoca, artık yalnızca öğrencinin kendi bilgi işleme serüvenine, makul geri bildirimler aracılığı ile dâhil olmaktadır. Jacotot'un öğrencileri canlı bir dilin indirgenmiş bir hali ile değil, hayatın içinde gerçek bir olgu ile karşılaştıklarından; bir dile yeni başlayanların çekimserlikleri ile değil, daha ziyade bir yazar gibi Fransızca konuşmakta, derslerde karmaşık tartışmalar yürütmektedirler (Ranciere, 2020). Bu durum -en azından Ranciere'nin anlatısındaki hali ile- mekanik ön-tanımlar üzerinden kurulan bir bilginin yerini, öğrencinin hayatla kendi karşılaşmaları ile organik bir biçimde büyüttüğü bir bilginin aldığı biçiminde yorumlanabilir.

Ranciere'nin (2017) anlatısında ortaya koyulduğu haliyle Jacotot, bu deneyi başka pratiklerde de devam ettirmiştir. Jacotot piyano çalmayı bilmemektedir, buna rağmen piyano dersleri vermiştir. Resim yapmayı bilmemektedir, lakin resim dersleri vermeyi sürdürmüştür. Ancak bu dersler önemli bir farkı ortaya koymaktadır: öğrenciler, öğrenmeyi belirli bir disipliner kodun içinde ustalaşmak yerine, zihinsel bir özgürleşme süreci olarak tecrübe etmektedirler. Bilginin kavramsallaştırılmasına yönelik bu tarihsel kırılmanın, yalnızca Jacotot'un deneyleri ile sınırlı kalmadığını tartışmak mümkündür; zira bilgi ve hayat arasındaki ilişkinin farklı türden kavranışları başka tarih-yazımları üzerinden de takip edilebilir haldedir. Söz gelimi, Friedrich Kittler (1998), *Discourse/Networks: 1800/1900* isimli çalışmasında, 19. yüzyılın başlarında Almanya'da gerçekleşmiş, benzer bir dönüşüme dikkat çekmektedir. Kittler'e (1998: 6) göre 18. yüzyılda bilginin konumu bir dışsallıklar dünyasına ilişkindir. Kittler'in Alimler Cumhuriyeti (Republic of Scholars) diyerek gönderme yaptığı, 1800'lü yıllardan önceki dönemde öğrenim, klasik metinlerin öğrenci tarafından kopyalanarak tekrar üretilmesine ya da yüksek sesle, yorum katılmadan tekrar edilmesine dayalıdır. Yeni bilgi üretimi ise, yalnızca bu klasik metinlere açıklama yoluyla yapılan genişlemeleri kapsamaktadır. Kittler'e göre (1998: 6) bu dışsallıklar sistemi, 1800'lerin başından itibaren çözülmeye başlamaktadır. Almanya'da Goethe, Schelling gibi yazarlar, doğanın yazar tarafından tecrübe edilmesinde, klasik metinlerde yazanlardan daha samimi türden bir hakikat yattığı kavrayışlarını yaygınlaştırmışlardır. Yazılarında diğer metinlere açıklamalar yapan bir bilgi türünün dışına çıkmışlar; doğrudan doğanın işleme biçimlerini tercüme ederek üretilen, yorumbilimsel bir bilgi türünü ortaya koymuşlardır.

Farklı bilgi türlerine yönelik yaklaşımların, mimarlığa, kuram-sonrası tartışmasından önce nüfuz ettiğini tartışmak da mümkün görünmektedir. Söz gelimi Philip Steadman (2008: 199) mimarlıkta önceden tanımlı bir bilgiyi ve gelenekten gelen kuralları reddetmeye meyilli mimarî düşünce biçimlerinin gelişimine değinmektedir. Steadman (2008: 199) 1960'larda pek çok mimarlık okulunda yaygın bir biçimde tatbik edildiğini ifade ettiği problem-çözmeci mimarlık kavrayışlarının kökenlerinden birini, Hannes Meyer'in,

geleneksel ön kabulleri tasarım sürecinin dışında bırakmaya odaklanan Bauhaus öğretileri üzerinden tartışmaya açmaktadır. Steadman'a (2008: 199) göre mimarlık, enformasyonla ilişkili bir alanda problem-çözme odaklı bir hale, Meyer'in Bauhaus döneminde gerçekleştirdiği deneylerle başlamıştır. Helené Frichot (2017) da mimarlıkta kuramın ölümü söylemlerini bir kuruntu olarak nitelediği metnini, kuram-sonrasının, kuramsal bilgiye yönelik eleştirisi üzerinden yapılandırmaktadır. Frichot'a göre (2017: 33), eğer geleneksel kuram "tepeden inme" bir biçimde mimarlığa biçim vermeye çalışıyor ise kuramsal bilginin kendisinin de bir öz-örgütlenme süreci olarak düşünülmesi, "aşağıdan yukarı" bir biçimde kurulması da olasıdır. Frichot (2017: 33) böylelikle, kuramın yalnızca "pasif bir izleyicilik" konumuna indirgenmesine karşı çıkmakta ve kuram-sonrasının üstlendiği, kuramın hayatla kurabileceği ilişkinin yalnızca bir yadsıma ilişkisi olacağı argümanını eleştirmektedir. Bunun yerine, kuramın "olayın tam da merkezinde" yer alabileceğini ifade etmektedir. Kuramın bugün hayat içinde üstlendiği faillik değişmekte olsa bile, hala, hayat ile kurulan ilişkide farklı biçimlerde araçsallaştırılabileceğini tartışmaktadır.

Yine de, metinde buraya kadar 19. yüzyıla ait organizma düşünceleri ile kurulan bu paralelliklere rağmen mimarlıkta kuram-sonrasının, organizmacılığın barındırdığı özcülüğe karşıt ve çoğulcu bir pozisyonu üstlendiği vurgulanmalıdır. Mimarlıkta "kuram-sonrası" özcülük karşıtıdır, çünkü mimarlık eyleminin önceden tanımlanabilecek kararlı bir öze, nüveye, ilerleme çizgisine, tarihsel bir motora ya da kimliğe sahip olmadığını kabul ederek işe başlamaktadır. Kuramı bir kimliklendirme, tanımlama ve tarif etme çabası olarak anlamaya meyilli olsa bile, bu türden tanımlama çabalarının ancak ve ancak bir dizi toplumsal ve tarihsel koşul ile birlikte geçerli olduğunu ifade etmektedir. Çoğulcudur; zira mimarlık pratiğinin farklı biçimleri içinde yer alan farklı faillik türlerini mimarlık bilgisi içinde anlamlı kılmaya çalışmaktadır. Artık eyleme geçme halini önceden tarif etmekte olan bir avangard mimarlığın yerine, "sadece-orada-olanın" (Speaks, 1998) ilişkileri ile bu ilişkileri dönüştürmek niyetiyle ilgilenen bir mimarlığı tartışmaya açmaktadır. Mimarların, tek başlarına yaratıcı deha oldukları modelden sıyrılmaları, müelliflikerini algoritmalarla paylaşmaları kutlanmaktadır. Bu teknolojilerin dolayımında gittikçe hızlanan ekonomik yapıların içinde alışılmadık ortaklıklar kuran, bu ortaklıklarda mimarlığın tanımlarını tekrar ve tekrar bozulmaya uğratan mimarlık biçimlerinin imkânları tartışmaya açılmaktadır.

Araştırmada, bu bölümde kuram-sonrası söylemlerin tarif ettiği hayata ve canlılık, bu canlılıktan devşirilebilecek bilginin rolü, mimarlık düşünce tarihindeki paralellikleri ile bağlantılandırılmıştır. Bir sonraki bölümde, kartografinin, organizmanın tarif ettiği canlılığın özcü olmayan, üretken bir kavranışa dönüşme biçimi irdelenecektir. Organizmanın yerini organizasyonun aldığı bu canlılık türü, gerek mimarlık içi, gerek mimarlık dışı bazı öncüllerle bağlantılandırılacaktır. Böylelikle kuram-sonrası söylemlerin farklı tarihsel bağlantıları görünür hale getirilecektir.

Kuram-Sonrasının Oluşlarının Mümkün Tarihleri

Bir önceki bölümdeki kartografi girişiminin de ipuçlarının serimlendiği gibi, mimarî edimin doğaya ve canlılığa ilişkin metaforlara başvurularak anlaşılıp, gerekçelendirilmesi, mimarî düşünce tarihinde yaygın ve üretken yöntemlerden birini oluşturur. Bu doğa ve organizmaya yaslanan açıklamaları bir kaç biçimde anlamak olasıdır: söz gelimi batı mimarlık kuramında, tüm kozmosa ait harmonik düzenleri insan bedeni üzerinden anlama çabasının, Vitruvius'un rönesans dönemindeki tercümelerinde ve sonraki yüzyıllarda da, etkisini şu ya da bu şekilde sürdüren kökensel bir hattın varlığı tartışılabilir. Ya da Joseph Rykewert'in (1997: 28) *On Adam's House in Paradise: The İdea of Primitive Hut in Architectural History* isimli kitabında tartıştığı haliyle, büyük ve karmaşık yeni sorunlar ile karşılaşıldığında, ilk "mimarlığın bilinçöncesi bir haline", kökene, başlangıca, öze yani saf, toplumun hatalı kabulleri tarafından tarafından bozulmamış, otantik bir biçimde durmakta olan kendiliğine başvurulması ve öngörülen kapsamlı dönüşümlerin gerekçesinin burada ıspatlanmaya çalışılması olarak da kavranabilir. Mimarlığın bu doğaya dönüşlerinin teolojik, kültürel, teknolojik, siyasi, ahlakî vb. perspektiflerden başka tarihsel açılımlarını üretmek mümkün görünmektedir. Yine de daha önce ifade edildiği gibi, kuram-sonrasının başvurduğu canlılık; kalıcı bütünlüklerden, harmonik düzenlerden, kararlı sistemlerden, ruha bağlı mistik, aşkınsal açıklamalardan ya da karmaşık süreçlerden indirgenmiş, genellenebilir mekanik sistemlerden oluşmaz. Bunun aksine, planlı ve iradî insan eyleminin merkeziliğini yadsımaktadır. Kuram-sonrası değişken, beklenmedik etkilere açık, spontane, toplumsal ve kültürel sistemleri de biyolojik sistemlerle aynı ontolojik zemine yerleştiren bir ekolojinin içinde açıklamaya çalışan; özler ve kökenler yerine, üretken süreçlerle ilgilenen bir tür canlılığa gönderme yapar.

Ancak gönderme yapılan bu türden bir dünyanın, kuram-sonrası argümanlardan daha önce mimarlık kuramına nüfuz etmeye başladığı ifade edilebilir. Bu nüfuz, farklı olgular üzerinden takip edilebilecek bir dizi tarih-yazımında görünür hale getirilebilir. Olası tarihsel açılımlardan biri, Steadman'ın (2008) doğa felsefelerinden ve biyolojinin çeşitli versiyonlarından devşirilen metaforların mimarlıkta kullanılma biçimleri üzerine yürüttüğü tartışmasında kapsamlı soykütüğünde takip edilebilir haldedir. Steadman (2008) "organik analoji", "sınıflandırmacı analoji", "anatomik analoji" vb. gibi dizi kategori üzerinden canlılık ve doğa kavrayışlarının mimarlık kuramında ve pratiğinde başvurulma biçimlerini değerlendirmektedir: "Organik analoji" başlığında, organik kavramının, insan bedeninin bir makine olarak anlaşılmaya başladığı kartezyen görüşlerden itibaren edindiği ikircikli anlamlara gönderme yapmaktadır. Bir taraftan organizmanın bütünlüğünün mekanist etkileşimlere indirgendiği 19. yüzyıla ait biyoloji kavrayışlarının etkileri, diğer taraftan organizmanın bütünlüğünün yalnızca bu mekanik prensiplerle açıklanamayacağını vurgulayan romantizmin çeşitli biçimleri ile kurulan bağlantılar, organizma analojisinin mimarlıkta karmaşık bir alana gönderme yapmasına sebep olmaktadır. Steadman'a (2008: 13) göre, 20. yüzyılın ilk yarısından geliştirilen elektronik servo-mekanizmalar ile birlikte makineler de bir tür organizma gibi anlaşılmaya başlanmaktadır. Böylelikle mekanizma ve organizma arasında kurulan karşıtlık, enformasyonel sistemler tabanında aşılmaktadır.

Sanford Kwinter'ın (1994) *Architecture and Technologies of Life* isimli makalesinde, teknolojinin kavranmasında 20. yüzyıl başlarında gerçekleşen bu son derece kritik değişime vurgu yaptığı söylenebilir. Kwinter (1994: 3), 19. yüzyıl teknolojilerinin, insanın dışındaki dünyanın kontrol altına alınmasına yönelik bir ilgiyi cisimleştirdiğine, 20. yüzyılın başından itibaren ise, insan bedeni ve doğasının kontrolü üzerine yoğunlaşıldığına dikkat çekmektedir. Kwinter'a göre (1994: 4) bilimin "bilme/yapma" konularındaki dikkatini insana ve doğadaki diğer organik bileşenlere kaydırması, belki de modern tarihin en önemli gelişmesini belirtmektedir. Kwinter'ın anlatısı (1994: 4), mekanik paradigmanın mimarlıkta çoktan dağılmaya başladığını ifade etmekte ve "hayatın organik, termodinamik ve enformasyonel" kavrayışlarının, Peter Eisenman, Bernard Tschumi, Rem Koolhaas gibi aktörlerin bile tasarım stratejilerinin bir parçasına dönüştüğünü ifade etmektedir. Kendi kendini gerçekleştiren bir kehanet olarak yorumlanmaya açık olsa da, Kwinter'ın makalesinden yaklaşık beş yıl sonra, Eisenman'nın ofisinin, Museé de Quai Branley yarışması (1999) için önerdiği proje, hayatın bu enformasyonel kavrayışına dair paradigma değişimini kanıtlar bir biçimde ifade kazanmaktadır. Eisenman (1999) Renzo Piano'nun tasarladığı Pompidou Merkezini, mekanizmin ve endüstriyel dönemin içe doğru patlaması (implosion) olarak okuyan Baudrillard'a gönderme yapmakta ve önerdikleri müze projesinde başka bir içe patlamanın peşine düştüklerini ifade etmektedir. Marksist diyalektiğin mekanik dünyasından, biyolojik ve enformasyonel bir Darwinciliğe geçiş metaforuyla açıklanan proje, kentin sürekli yeni biçimler üreten belirmeci (emergent) bir sistem halinde okumakta ve kendi biçimlerini bu genetik akışın uzantısına yerleştirmektedir. Eisenman, bu karmaşık oluşlar dünyasını mimarî biçimlere indirgeyerek de olsa, kuram-sonrasının organizasyonel canlılık tanımına, kuram-sonrasının itirazlarından hemen önce yaklaşmıştır.

Kwinter'ın vurguladığı paradigma değişiminin, 1990'lı yıllardan ve kuram-sonrasının kurguladığı eleştirinin nesnesini belirten, yukarıda sıralanan "kuramsal mimarların" pratiğinden çok daha önce başladığını tartışan tarih-yazımlarına da dikkat çekilebilir. Söz gelimi Reinhold Martin (2004) *The Organizational Complex* isimli kitabında, organizmanın ve canlılığın enformasyonel örüntüler düzeyinde anlaşılmaya başlamasının mimarlık düşüncesinde eş-zamanlı olarak belirmeye başladığını tartışmaya açmaktadır. Martin (2004:8) bu yeni türden organizma kavrayışına "organizasyonel" ismini vermekte ve bu organizasyonelliğin, modern mimarlığa içkin çeşitli organizmacılık kavrayışları ile barındırdığı farklılıkları tartışmaya açmaktadır. Bu organizasyonel sistemler "ağlaştırılmış, sistem-merkezli, geri-besleme tarafından yönetilen türden" (Martin: 2004: 8) bir organizma kavrayışını belirtir; "hareketli bir de-regülasyonla, kurumsal ihsanla (corporate benevolence), dağınık ve hiyerarşilerden arındırılmış etkileşimsellikle" (Martin, 2004:8) ilişkili biçimde anlaşılmıştır. Martin'e (2004:8) göre bu sistem-temelli organizasyon düşüncesi, kendinden önce gelen modernist organizmacılıkla tarihsel bir süreksizliği belirtmektedir; ancak bir devamlılığın içinde ifade kazanmış gibi anlaşılmıştır. Martin (2004), sibernetik kuramının en önemli figürü Norbert Weiner'ın, Karl Deutsch ve Giorgio de Santillana ile Life dergisine yazdığı, herhangi bir nükleer saldırıdan sonra kentsel sistemlerin çalışmasını garanti altına alacak öz-örgütlenmeci kentleşme önerilerinden; Saarinen'in 1950'lerde uyguladığı açık ofis çözümlerinde belirli organizasyonel örüntülerin kullanılmasına kadar hayatın bu yeni kavranışının 20. yüzyıl ortalarında mimarlık düşüncesinde sahip olduğu etkiyi tematize etmektedir.
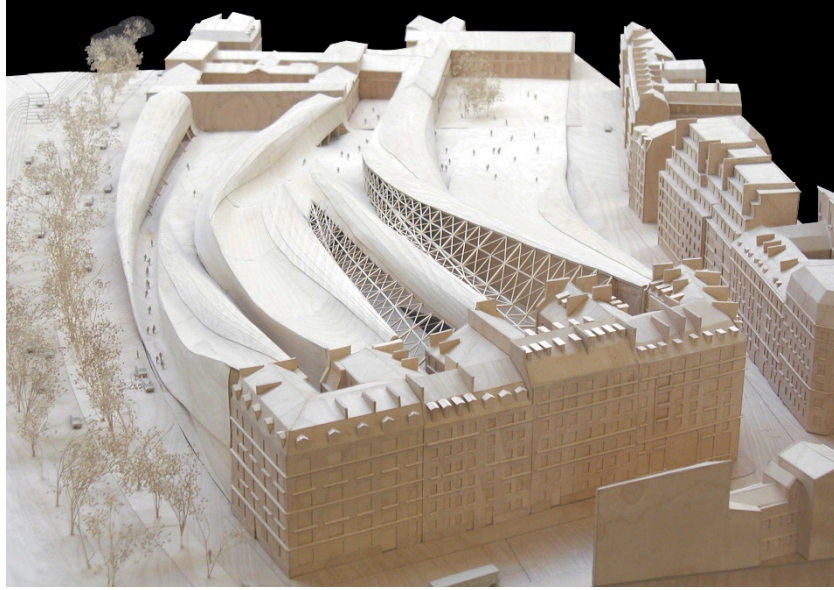
Görsel 1. Eisenman'ın ofisinin "Museé de Quai Branley" için önerdiği projeye ait maket fotoğrafı

Eğer canlılığın ve hayatın, sistemler tabanlı tanımlarını üretmeye yönelik girişimlere mekanizma kavrayışları da dâhil edilirse, bu olası tarih-yazımlarını daha da geriye götürmek mümkün hale gelmektedir. Söz gelimi Mark Wigley (2007) böyle bir çabayı cisimleştirerek, 2000'lerin başında kuram sonrası argümanlarla eşzamanlı ve ilişkili bir biçimde beliren, kuram-sonrasının hayatla ilişki kurmak tartışmasında sıklıkla kesiştiği ağ pratiklerinin tarihini geç 17. yüzyıla kadar götürmektedir. Wigley'e (2007) göre Vitruvius'un risalesinin Rönesans'taki yorumları, Perrault'nun yükselttiği itirazla birlikte çözülmeye başlar başlamaz, mimarlığın bilgisi doğadaki diğer mekanik sistemler gibi anlaşılmaya başlanmaktadır. Wigley'in (2007) tarih anlatısına göre 17. yüzyılın sonuna kadar mimarlık bilgisinin merkezinde, iyi oranlanmış düzenler bulunmaktadır. Bu oranları mimarlıkta, Kraliyet Akademilerinin üstlendiği merkezi rolle birlikte anlamak gerekmektedir.

Tüm evrene sirayet eden bir hakikatin bilgisini ele verdiği düşünülen oranlar, doğayı biçimlendiren kozmik bir harmoninin, bu kozmik harmoniyi kuran ve yürüten ilahi bir otoritenin ve en nihayetinde, bu ilahi otoritenin dünya üzerindeki temsilcilerinin kozmolojik sürekliliği içinde anlaşılmaktadır. Kısaca tebaadan tanrıya doğru kurulan bu düşey hiyerarşilerin çözülmesine kadar, mimarlık bilgisinin merkezinde, dünyevi varlığı aşan, ilahi bir otorite yer almaktadır. Ancak bu kurgu, mekanizmacı görüşlerle birlikte çözülmektedir. Wigley (2007) çözülmeye sebep olan bu sistemsel düşüncelerin farklı tarihlerinin Perrault, Durand, Semper, Viollet-Le-Duc gibi mimarlık kuramcılarının analitik çalışmaları üzerinden yazılabileceğini vurgulamaktadır. Mari Hvattum'un (2017) sanat kuramlarını üslup kavramını, benzer bir yırtılma ve sistemleştirme girişimi olarak anladığı yorumu da mümkün görünmektedir. Hvattum'a (2017: 2) göre 18. yüzyıla kadar, tarih, yine bir kozmolojik süreklilik içinde, kayda değer olayları aktarma işlemini belirtmektedir. Hvattum'a (2017: 2) göre Wincklemann'ın üslup kavrayışı, sanatı kavrayışında da hüküm süren bu sürekliliğin yönünü çeşitli farklılaşmalara çevirmiştir. Böylelikle tarih boyunca insan eyleminin evrensel olanları ve zamana-mekâna göre değişen bileşenleri arasında bir ayrım kurulabilir hale gelmiştir. Hvattum'a (2017: 2-3) göre, tarihin bu türden kavranışları ile birlikte, adeta bir doğa bilimcinin canlı bir organizmanının serpilip gelişmesini incelemesi gibi, farklı zamansal-mekânsal koşulların, yani çağların, kendini kolektif bir biçimde ifade etmesinin bütüncül parametreleri araştırılmaya başlanmaktadır.

Mekanizma ve organizma arasında kurulan karşıtlığın ve bu karşıtlığın geçirdiği dönüşümlerin, farklı bilgi alanlarında kapsamlı açılımları ve tarih-yazımları yapılmaktadır. Söz gelimi Katherine Hayles (1999) *How We Became Post-Human* isimli kitabında kültürel tarih perspektifinden, Amerika'daki enformasyon kültürü, sibernetik kuramları ve Philip K. Dick'in bilim-kurgu edebiyatı arasındaki karmaşık bağlantıları tartışmaya açmaktadır ve daha önceleri insanı tanımlamak için kullanılan organik bütünlüğün ve iradîliğin; kendini maddîlikten soyutlamış, bedeninin sınırlarını enformasyonel ağlara ve sistemlere dağıtmış bir insan-sonrası hale dönüşme biçimini sorgulamaktadır. Jussi Parikka (2010) karınca ve arı kolonileri gibi hayvan

davranışlarının 19. yüzyılda toplumsal düzeni açıklayan bir organizma olarak üstlendikleri metaforik rolden, merkezi olmayan bir zekâ türünün enformasyonel etkileşimlerde nasıl ortaya çıkabileceğinin deney sahasına dönüşmesinin karmaşık tarihine odaklanmaktadır. Parikka (2010), Speaks'in (2017) kuram-sonrası argümanlarında odaklandığı türden dağıtık zekâların düşünce tarihinde belirme biçimlerine göndermeler yapan; entomoloji, etoloji ve bilgisayar bilimleri arasındaki bölgeyi keşfe çıkmaktadır. Medya teknolojileri, kültürel çalışmalar gibi alanlarda gerçekleştirilen bu tarih yazımı örneklerinin sayısını artırmak mümkündür.

SONUÇ VE DEĞERLENDİRME

Draismaa (2014) *Bellek Metaforları: Zihinle İlgili Fikirlerin Tarihi* isimli kitabında, doğrudan deneysel erişimimiz altında olmayan bellek ve zihin gibi karmaşık olguların, düşünce tarihi boyunca farklı metaforlarla ele alındığının altını çizmektedir. Zihin ve bellek, insanlık tarihi boyunca balmumu levhalarla, saraylar gibi mimarî nesnelerle, gramafon gibi ses kayıt yüzeyleriyle, bilgisayar sistemleri ya da holograflar gibi metaforlarla anlaşılmıştır. Bu açıdan, hayatı enformasyonel sistemlerle, kurumsal yoğunlaşmalarla, yönetimsel ağlarla ve bilgi işleme süreçleri ile birlikte düşünmek, türdeş bir metaforik işlevi yerine getirmektedir. Kuram-sonrasına yönelik argümanlar, hayatı ve hayatın içinde gerçekleşebilecek olası mimarlık eylemlerini tematize etmek için yeni araçlar kullanmayı denemiştir. Bu açıdan kuramın sonu ve sonrası tartışması, mimarlık düşüncesinin hayat ile kurduğu ilişkinin sorunsallaştırılmasıdır. Bu sorunsallaştırma, mimarlık eylemini dinamik bir organizasyonel pratik olarak yeniden tanımlamaya çabalamaktadır. Artık mimarlık, dünyayı düşüncesi ile biçimlendirmeye muktedir, merkezi bir bilince ve iradeye sahip bir insan eylemine gönderme yapmaz. Bunun yerine, sürekli değişmekte olan organizasyonel örüntülerin içerisinde konumlar tutan bir faillik türüne işaret eder.

Kuram-sonrası bu şekilde kavramsallaştırıldığında, yalnızca mimarlık bilgi alanını değil, pek çok disiplinin kuramsal gündemini 19. yüzyıldan bu meşgul etmiş, önemli bir kuram problemi ile karşı karşıya kalınmaktadır. Araştırma, tam da bu nedenle, kuram-sonrasının, mimarlık kuramın ön-tanımlamalarının ötesinde, beklenmedik etkilere ve karmaşıklığa açık bir mimarlık pratiğini kavramsallaştırırken başvurduğu söylemleri, tarihsel bir perspektiften sorun haline getirmiştir. Buna göre mimarlık düşüncesi, ahlakî bir çerçeveyi takip ederek de olsa, doğanın işleyiş biçimlerini meşru bir mimarlık eyleminin yegâne gerekçesi olarak değerlendirir değerlendirmez, hayatın önceden insan zihni tarafından belirlenmiş sınırlarının dışında kalan bölge ile karşı karşıya kalmıştır. Bu durum göz önünde bulundurulursa, hayatın karmaşıklık üreten enformasyonel etkileşimlere indirgendiği yeni bir model, tek başına kuramın sonunu dile getiremez. Bilakis, kuramsal çabayı yeniden ön plana çıkarır. Zira kuram-sonrasının belirttiği hayat fikri, kuramın 19. yüzyıldan bu yana ortaya koyduğu bir dizi kriz ile hazırlanmıştır.

Hayatın bir dizi mekanik sistem olarak tasavvur edilmesi, bu mekanizmacı indirgemelere direnen, aşkın bir bütünlüğü savunan organizma fikrinin ortaya koyulması, organizmanın barındırdığı karmaşıklığın enformasyon tabanlı, sistemsel ve organizasyonel biçimlerde açıklanmasının her biri önemli kuramsal gelişmelerdir ve mimarlık düşüncesine eş zamanlı olarak sirayet etmişlerdir. Sırasıyla, mimarî biçimlenmeyi bir organizma oluşumu olarak anlayan 19. yüzyıl düşünceleri, sonrasında mimarî biçimleri canlı türleri gibi sınıflandırmaya çalışan analojiler ve en nihayetinde tasarım sürecini önceden sahip olunan bir dizi bilgiyi dışarıda bırakmayı amaçlayan bir enformasyon-işleme süreci olarak ele alan 20. yüzyıl deneyleri bu etkileşimin örneklerini ortaya koymaktadır. Öyle ki, 1990'lı yıllarda, hayatın bu türden kavramsallaştırılmasının mimarî biçimlenmede açtığı tartışmalar, kuramsal üretimin önemli bir sahasını belirtmiştir. Mimarlık disiplinine ait sınırların, mimarlık kuramlarının ve işleyişlerinin, hayatın yeni tanımlarını getiren bu modellerden beslenmesinde bir sorun görünmez.

Mimarlıkta kuram-sonrası da, hayat ve kuram arasındaki bağlantıyı sorgulamış, mimarlık disiplininde kuramı askıya alabilmek için, dinamik ve değişken, birbiri ile etkileşim içerisinde, belirli kimliklere sahip olmadan yeni biçimler üretebilen bir hayat kavrayışını vurgulamıştır. Ne var ki, hayatın bu türden bir kavramsallaştırmasının kendisi kuramsaldır ve bu kabulün 19. ve 20. yüzyıllarda yeniden gün yüzüne çıkmasının siyasi, kültürel, teknolojik vb. bileşenler içeren karmaşık bir dizi tarih-yazımı mümkündür. Böyle değerlendirildiğinde, kuram-sonrasının yaslandığı söylemler, kuramı ve daha geniş hali ile düşünme edimini dışarıda bırakmaya dair bir çağrıyı geçersiz kılar. Kuram-sonrasının yaslandığı söylemler, bu açıdan kuramın

sonunu değil, düşünme ediminin etkileşimsel yapısını sorun haline getiren bir kuramcılığı üretmek için de araçsallaştırılabilir. Metin içerisinde değinilen tarih-yazımları, temelde, bu türden bir düşünme biçiminin ürünlerini tartışmaya çağırmaktadır. Bu çalışmada ortaya konulan metinsel kartografi, mimarî düşüncelerin tarihinin bu kapsamda sorunsallaştırılması için olası bir dizi yeni konumu işaret etmektedir. Çalışma, bu açıdan kuram-sonrası tartışmalarını, mimarlık kuramının sonunu belirten bir dizi söylem olarak değil, mimarlık kuramı için olası yeni konumlar işaret eden, bir problem sahası olarak yeniden üretmiştir.

Bu nedenle hayata dair başka kavrayışlar inşa etmek, hayata üretken bir biçimde dâhil olmak ve hayatın akışları içinde yeni faillikler edinebilmek için kuramsal çabayı -kuram-sonrası söylemlerinin tüm imalarına rağmen- yaşatmak anlamlı görünmektedir. Kuram-sonrasının merkezî bir biçimde vurguladığı, yeni bedenler ve kendilikler üreten etkileşimsel süreçler, düşünce tarihinin karmaşık yankılarına yaslanmaktadır. Bu yankılar mimarlık pratiğinin kolektif bedenlerinde ve hafızalarında varlığını sürdürmekte ve ifade etmektedir. Bunları teşhis edebilmek, söylemlerin ürettiği yönetimsel saha ile üretken ve yaratıcı ilişkiler kurmak, başka bir hayatı -önceden tanımlı, bütünlüklü, ütopyacı bir proje ile olmasa da- üretmek için yeni bir dizi imkân barındırmaktadır. Hayat ile ilişki kurabilmek için bilgiyi askıya almak gerekmez, bilginin kendisi de kapsamlı bir sorgulamanın önemli bir parçası olarak kullanılabilir.

Authors' Contributions

The 1st author contributed %60, and the second author contributed %40 to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

The study does not require an ethics committee approval.

KAYNAKÇA

Adams, R. P. (1957). Architecture and the romantic tradition: Coleridge to Wright. *American Quarterly*, *9*(1), 46-62. https://doi.org/10.2307/2710068

Aureli, P. V. (2015). *Az yeterlidir: Mimarlik ve asketizm üzerine* (B. Bilir, Çev.). Lemis Yayın.

Braidotti, R. (2021). Eleştirel insanötesi bilimler için kuramsal bir çerçeve (Ç. Taşkın Geçmen, Çev.). *Pasajlar Sosyal Bilimler Dergisi: Posthümanizm.*

Deleuze, G. (2001). Denetim toplumları konusunda bir ek (U. Baker, Çev.). *Birikim Dergisi*, *Şubat-Mart 2001*.

Deleuze, G. (2013). *Foucault* (B. Yalım & E. Koyuncu, Çev.). Norgunk.

Draaisma, D. (2005). *Bellek metaforları: Zihinle ilgili fikirlerin tarihi* (G. Koca, Çev.). Metis Yayınları.

Eisenman, P. (1999) *Eisenman Architects*. https://eisenmanarchitects.com (19.04.2022).

Eagleton, T. (2004). *After theory*. Basic Books.

Frichot, H. (2017). *Mimari teorinin ölümü ve diğer kuruntular üzerine* (G. Yeşildağ, Çev.). Sub Yayınları.

Hayles, N. K. (1999). *How we became posthuman: virtual bodies in cybernetics, literature, and informatics*. University of Chicago Press. https://press.uchicago.edu/ucp/books/book/chicago/H/bo3769963.html

Hvattum, M. (2017). Zeitgeist, style, and stimmung: historiography of architecture. *Companion to the History of Architecture* İçinde (s. 1-24). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118887226.wbcha070

Kittler, F. A. (1990). *Discourse networks 1800/1900*. Stanford University Press.

Kwinter, S. (1994). Architecture and the technologies of life. *AA Files*, *27*, 3-4.

Martin, R. (2004). *The organizational complex: architecture, media, and corporate space*. MIT Press.

Martin, R. (2017). Neye karşı eleştirel? Ütopyacı bir gerçekçiliğe doğru (2005). İçinde A. K. Sykes (Ed.), & G. Akyürek (Çev.), *Yeni bir gündem inşa etmek: Mimarlık Kuramı 1993-2009* (ss. 321-336). Küre Yayınları.

Parikka, J. (2010). *Insect media: an archaeology of animals and technology* (1st edition). University Of Minnesota Press.

Ranciere, J. (2020). *Cahil hoca: zihinsel özgürleşme üstüne beş ders* (S. Kılıç, Çev.). Metis Yayınları.

Rykwert, J. (1997). *On Adam's house in paradise: the idea of primitive hut in architectural history* (Second edition). MIT Press.

Somol, R., & Whiting, S. (2017). Doppler etkisi ve modernizmin öteki ruh halleri üzerine düşünceler (2002). İçinde A. K. Sykes (Ed.), & G. Akyürek (Çev.), *Yeni bir gündem inşa etmek: Mimarlık kuramı 1993-2009* (ss. 175-178). Küre Yayınları.

Speaks, M. (1998). It's out there... The formal limits of the American avant-garde. *Architectural Design*, *133*, 26-31.

Speaks, M. (2002). Theory was interesting… but now we have work: no hope no fear. *Arq: Architectural Research Quarterly*, *6*(3), 209-212. https://doi.org/10.1017/S1359135503001714

Speaks, M. (2017). Tasarım zekası (2002). İçinde A. K. Sykes (Ed.), & A. Gökyürek (Çev.), *Yeni Bir Gündem İnşa Etmek: Mimarlık Kuramı 1993-2009* (ss. 191-199). Küre Yayınları.

Steadman, P. (2008). *The evolution of designs: biological analogy in architecture and the applied arts*. Routledge.

Trilling, L. (1973). *Sincerity and authenticity* (First Edition). Harvard University Press.

Van Toorn, R. (2017). Hayallerin sonu mu? Güncel Hollanda mimarlığında gerçeklik tutkusu ve bunun sınırları (2004/5). İçinde A. K. Sykes (Ed.), & A. Gökyürek (Çev.), *Yeni bir gündem inşa etmek: Mimarlık kuramı 1993-2009* (ss. 269-292). Küre Yayınları.

Watkin, D. (1977). *Morality and architecture: the development of a theme in architectural history and theory from the gothic revival to the modern movement*. Clarendon Press.

Wigley, M. (2007). The architectural brain. Içinde A. Burke & T. Tierney (Ed.), *Network practices: New strategies in architecture and design* (1st ed). Princeton Architectural Press. https://trove.nla.gov.au/version/42830436

Görsel Kaynakçası

Görsel 1. *Eisenman Architects*. https://eisenmanarchitects.com (19.04.2022).

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Employing project-based learning to foster essential professional skills in students of graphic design

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** This study is prepared from the thesis titled "Graphic Design Education: Generating Real-world Design Opportunities within Academic Institutions to Foster Learning and Facilitate Easier Transition from Academics to Industry " which was accepted as the Doctoral Thesis of the Department of Design, Banasthali Vidyapith, India.

Abstract

Around the world, employers seek graduates with collaboration, teamwork, interpersonal, communication, and project management skills worldwide. Project-based learning (PBL) helps foster these essential professional skills by providing learning opportunities in an environment of mutual investigation. Collaboration is integral to PBL, but often advantages of collaboration are not the focal point of discussion. This study focuses on creating a collaborative learning environment by introducing a real-world project under PBL instructional strategy to check its efficacy in developing some essential professional skills in graphic design education. The project was introduced in 2019 in the Publication Design course undertaken by 35 students enrolled in an undergraduate graphic design programme in India. The study employed mixed-method research in the form of a survey questionnaire followed by semi-structured interviews. The study results show that PBL helps foster the skills mentioned earlier to prepare students for the 21st-century workplace. Joint efforts by students in projects in graphic design education develop multiple skills much needed in the current workplace scenario.

Keywords: Project-Based Learning (PBL), Essential Professional Skills, Collaboration, Graphic Design Education, Real-World Project

Extended Abstract

Introduction: Employers in the twenty-first century emphasize collaboration, teamwork, interpersonal, communication, project planning, and problem-solving skills besides core discipline skills (Donnelly & Fitzmaurice, 2005: 2; Fallows & Steven, 2000: 75; Trilling & Fadel, 2009 as cited in Kivunja, 2014: 81). Design educators aim to prepare students for the practice of the profession thus, it is imperative to create learning environments that give them the experience and exposure of the professional environment. Jones (2109: 1) points out that project-based learning is an instructional strategy that addresses the curriculum requirements through collaboration on a real-world project for a long duration. The product development phase entails iterations and reflections resulting in an artefact presented in a public setting. The instructors provide scaffolding support but also respect the voice of the learners. PBL promotes the development of essential skills for the 21st-century work environment to become productive members of the globalized world (Bell, 2010: 43). Collaboration is one of the key components of PBL, providing learning opportunities in an environment of mutual investigation. Nonetheless, the advantages of collaboration are often not the focal point of discussion (Buckler, 2019).

Purpose and scope: This research's objective was to assess if Collaboration under PBL fosters essential professional skills amongst students of the undergraduate graphic design program. This research's objective was to assess the efficacy of collaboration under PBL in fostering essential professional skills amongst students of the undergraduate graphic design program. However, the core idea of introducing a real-world project under PBL to prepare students to meet the industry challenges is well-aligned with allied design discipline, allowing a wider application of this study.

Method: The study employed a mixed-method approach. A perception-based survey was employed in the form of a 5-point Likert scale, ranging from 1 as a result of strongly disagree to 5 as a result of strongly agree. The qualitative phase in the form of semi-structured interviews followed after the quantitative data collection. This paper describes a project-based learning environment for students registered in an undergraduate Communication Design programme in India. PBL learning environment was created in 2019 in the course Publication Design offered in Semester V—a core course focused on developing graphic design skills. The project required students' collaborative engagement to deliver the end product or the artefacts in the form of four books for the institute's library. The project addressed core curricular requirements allowing learners to explore and understand the fundamental concepts and principles of the discipline. A framework of PBL was designed and implemented in a studio setting. Four groups were formed based on individual skills and abilities to match the requisite skills for the projects, ensure heterogeneity, and create a cross-learning environment. Collaboration in groups was critical; there was a three-tier collaboration: a) collaboration with group members, b) collaboration with the class group, c) collaboration with the instructors. The design process for the project entailed various activities and methods. Situation analysis from different standpoints, problem articulation, idea exploration, prototyping and testing, feedback and improvement, and final delivery of the solution or the end product. Literature indicates that scaffolding techniques are very effective in teaching. The group projects were divided into three phases and broken down into smaller tasks to provide scaffolding support for a structural framework. The end-product results from the act of designing that employs the design process. The course resulted in four books designed by students for the Institute's library. These books represented the solution proposed by the students that reflected the development of their knowledge. After a five-week course duration, a survey questionnaire was administered to 35 students. The semi-structured interviews were conducted with 14 volunteers to gain clarity regarding the results of the quantitative data. Both qualitative and quantitative phases attempted to elicit students' responses on the development of teamwork, communication skills, interpersonal skills, and project management skills.

Findings and conclusion: The study results show that collaboration with peers in PBL creates an environment for developing a repertoire of skills useful in the workplace. Thus, it is an important vehicle to develop some important skills for future graphic designers. It is evident that participants utilised individual strengths to make a valuable contribution and seemed satisfied with the heterogeneous skills group. Tolerance and respect are essential aspects of living in a community. Connecting, communicating, and understanding varied viewpoints contextually to solve problems are critical for designers. Tolerance and respect are essential character traits fostered in collaborative pursuits. It was evident that the project of the given scale was possible due to the collaborative format of different minds working together, allowing learners to break away from the linear thought process. However, proper monitoring of group working mechanisms needs to be in place to ensure equal participation of each group member. Further, a proper balance is required on the part of the instructors so that while learners utilise their strengths optimally, they also come out of their comfort zones to explore different learning opportunities.

Keywords: Project-Based Learning (PBL), Essential Professional Skills, Collaboration, Graphic Design Education, Real-World Project

INTRODUCTION

Twenty-first-century employers are looking for graduates who possess collaboration, teamwork, interpersonal, communication, project planning, and problem-solving skills besides core discipline skills (Donnelly & Fitzmaurice, 2005: 2; Fallows & Steven, 2000: 75; Trilling & Fadel, 2009 as cited in Kivunja, 2014: 81). Design educators aim to create learning environments that prepare students for the workplace, therefore, establishing environments to engage learners in professional practice and experience is considered important. Jones (2019) states that the pedagogical approach that engages learners in real-world tasks to foster learning is called project-based learning (PBL), where learners collaborate on projects that address curriculum requirements. The learners engage for a longer duration to achieve their objectives by thoroughly examining the problem at hand. Further, the inquiry process involves iterations and reflection stages toward developing the artefact presented in a public setting. The project implementation process respects students' views, supported by scaffolding by the instructors (p. 1). PBL helps learners to foster essential skills that prepare them

for the 21st-century workplace and supports them in becoming productive members of the globalized world (Bell, 2010: 43). Collaboration is one of the key components of PBL that provides learning opportunities in an environment of mutual investigation. Nonetheless, the advantages of collaboration are often not the focal point of discussion (Buckler, 2019). In project-based learning, a real-world project refers to a project with real-world relevance, context, and utility. Further, PBL is an acronym commonly used for both project-based learning and problem-based learning. Both are popular educational approaches. In the current context, PBL stands for project-based learning. In the context of this study, an artefact is the end-product-a result of the act of designing.

This paper describes a project-based learning environment created for students registered in an undergraduate programme in communication design at Nirma University, India. In India, communication design has become an umbrella term encompassing graphic design, animation film design, exhibition design, film, and video design, and user experience design. The project required students' collaborative engagement to deliver the end product or the artefacts in the form of four books for the institute's library. The project addressed core curricular requirements allowing learners to explore and understand the fundamental concepts and principles of the discipline. This research contributes to graphic design education, especially to give teachers an exemplar of PBL and how collaboration fosters the development of essential professional skills.

Objective

The research objective was to assess the efficacy of collaboration under PBL to foster essential professional skills such as teamwork, communication, interpersonal skills, and goal-setting and project management skills amongst students of the undergraduate graphic design programme.

Literature Review

Key findings of *The Future of Jobs Report, 2020* indicate that skills gaps continue to be high, in-demand employability skills across jobs will change in the next five years, and they are likely to be inclined toward critical thinking and analysis, problem-solving, and self-management skills (p. 5). Organisation for Economic Co-operation and Development (OECD), 2018 report emphasises social and emotional skills such as empathy, self-efficacy and collaboration. Cognitive and meta-cognitive skills such as critical thinking, creative thinking, learning to learn, and self-regulation in students (OECD, 2018: 5). A study by Wang (2006: 79) concluded that besides design-oriented competencies, graphic design experts perceived soft-skills related competencies, critical for employment by graphic design practitioners. Wang (2006: 7), in his study, specifically refers to soft skills like teamwork, interpersonal skills, communication, leadership, creativity and problem solving. Jones (2019: 3) stresses that PBL is an excellent medium for teaching learners essential competencies like problem-solving, critical thinking, innovation, collaboration, and presentation-all relevant in the current economy. Furthermore, "collaboration yields the best results for professional development" (Boss & Krauss, 2014: 7). "The American Association of Colleges and Universities (AAC&U) considers collaborative assignments and projects as one of the ten high-impact practices that any course or curriculum could apply" (Kuh, 2008: 10). Race (2007: 126) expresses, the current emphasis is on key skills like oral communication, problem-solving, self-organisation, and reflection for which working in a social setting is essential. Experience of collaboration over projects brings forth benefits for learners through a setting and experience that simulates the workplace resulting in profound understanding and retention of subject matter besides developing complex cognitive activities like analysis, synthesis, and evaluation (Ellis & Hafner, 2007: 13). Despite the advantages of collaboration, a large part of research in this area has been conducted at the primary and secondary levels of education with limited empirical evidence to check its efficacy in higher education (Gokhale, 1995).

Course Description

Publication Design course is offered in semester V of the Communication Design undergraduate programme at Nirma University, India. It is one core course that focuses on developing graphic design skills. The course was based on the PBL framework focusing on collaborative projects. This course covers fundamental graphic design principles of designing for print publications. As a prerequisite, students underwent elementary courses in previous semesters to develop basic design skills, design concepts, and design theory, including courses in typography, layout, printing technology, and software training for print publication.

METHODOLOGY

The study employed a mixed-method approach. A survey questionnaire was designed and administered to 35 after a five-week course duration. The Institutional Ethical Committee, Nirma University, reviewed and approved Project No: IEC/NU/22/ID/01. The survey items were adapted from the existing literature on the theory of PBL. Thirty-three out of thirty-five students responded to the questionnaire; a majority (100%) of the students were in the twenty to twenty-two-year age bracket. A perception-based survey was employed in the form of a 5-point Likert scale, ranging from 1 as a result of *strongly disagree* to 5 as a result of *strongly agree*. Semi-structured interviews were conducted with 14 volunteers to understand and clarify the quantitative data results. Results of the quantitative data guided the interviews phase. Both qualitative and quantitative phases attempted to elicit students' responses on the development of teamwork, communication skills, interpersonal skills, and project-management skills.

Design and Procedure

Group Formation Strategy

The class of thirty-five was divided into four groups. The amount of work in projects determined the group sizes. Instructors' experience with the students helped in group formation. The requisite skills for the projects were content writing, illustration, photography, layout, typography, software skills, and knowledge of print production. Race (2007) suggests that for some extended group tasks, it may be valuable to try an arrangement to include at least one member with identified skills and competencies (p. 132). Members' selection was based on individual skills and abilities to match the requisite skills for the project, ensure heterogeneity, and create a cross-learning environment.

Collaboration

"Collaborative learning is an umbrella term for a variety of educational approaches involving a joint intellectual effort by students, or students and teachers together" (Smith & MacGregor, 1992: 11). The three-tier collaboration helped to achieve the project objectives.

***Collaboration with group members*:** This was at the heart of the project and the most important collaboration. Group members collaborated at different project stages for intermediary tasks in the design process (Figure 1). They collaborated during non-university hours through emails, Google documents, conference calls, WhatsApp groups, and online meetings to stay connected, take feedback, and track progress.

***Collaboration with the class*:** The class of 35 students together generated the written and visual content by contributing their work on courses undertaken in earlier semesters.

***Collaboration with academics*:** The content was checked for language, comprehension and carefully edited by a team of academics.

GROUP TASKS

- Design Brief Articulation
- Concept Generation
- Content Development & Management
- Prototyping
- Visual Language Design
- System Design
- Book Cover Design
- Feedback & Improvement
- Prepartion for Printing
- Artwork for Production
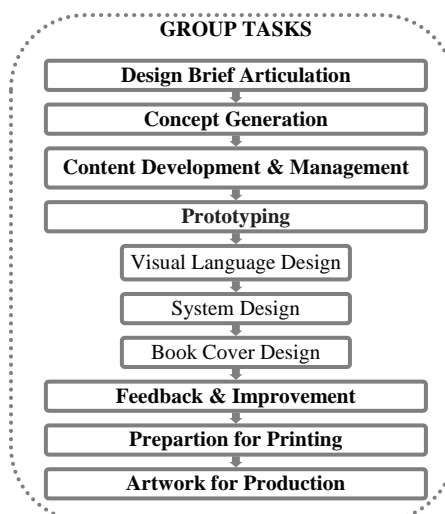
Figure 1. Stages of the design process for the project

The Design Process

A design process entails various activities and methods. Situation analysis from different standpoints, problem articulation, idea exploration, prototyping and testing, feedback and improvement, final delivery of the solution or the end-product. The steps in the design process are iterative and not necessarily linear. Graphic design education takes place in a studio setting where teachers engage the students in the activity of designing. "Learning by doing" in a design studio through design exercises is at the heart of graphic design education. "The design activity stage represents the process of designing. This has been referred to as the *learning by doing* approach and is fundamental to the authentic learning environments of project-based learning" (Dorst, 2006 as cited in Ellmers, 2014: 70).

Four groups were formed Group A to Group D to design different publications. Students had freedom for project selection, design decisions, and project planning & management. Several researchers, such as Deci & Ryan (1987: 1034) and Lepper (1988: 304), have argued that improving motivation in academic task choice and learner control is important. Teams contributed during all intermediate stages (Figure 1) of project development in collaboration with their respective group members with facilitation from the instructors.

Guidance and Scaffolding

To provide scaffolding support, group projects were divided into three phases and smaller tasks for a structural framework (Table 1). According to the Glossary of Education Reform, "scaffolding refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process" (Scaffolding Definition, 2013). Literature indicates that scaffolding techniques are very effective in teaching. Blumenfeld et al. (1991: 371) argue that teachers must employ scaffolding by breaking down tasks, giving models, exemplars, prompting and coaching learners to achieve the learning goals. Thus, to strengthen and revisit the fundamental concepts and skills a non-gradable crash assignment was given as a preparation for the future project with higher complexities. Literature indicates that show and tell method, modelling, exemplars are the cornerstone for scaffolding. The instructors showed examples of well-designed published books for discussion and analysis. In the initial stage, for group compatibility, students were made to research, analyse and present the work of well-known book designers. The project was interspersed with presentations on types of paper folds, imposition plans. (Here, imposition plan refers to a method of arrangement of pages for a book on the printer's sheet in a way that it appears in the correct order after the sheets are folded and trimmed), digital illustration techniques, standard paper sizes, and weights. In each of the three project stages (Table 1) many formative feedback sessions were held for giving clarity on tasks. The feedback sessions helped set course expectations where the highlight was an open dialogue amongst students and instructors while respecting students' voices and choices.

Table 1. Breaking down of tasks for scaffolding

Project Stages	Breaking down of tasks for scaffolding
Stage 1	Analysis of published books
	Analysis of work of known publication designers
	Design brief
	User understanding
	Concept generation
	Content collection and management
	Print production planning—book size, paper choice, binding, printing method, bleed margin, software selection
	Layout planning—grids, margins, columns, gutter-space
	Typographic decisions—selection of type, point size, type pairing, leading, kerning, drop letters, indents, page numbers, text hierarchy
	Colour—primary and secondary colour palettes
	Image creation—illustration design, photography
	Image management—scanning, image size, resolution, cropping, editing, colour mode
	Visual language design
	Visual system design
	Book cover design
Stage 2	Prototype
	Feedback
	Corrections and improvement

Stage 3	Artwork development—document size, image size, file format, resolution, colour profile, crop marks, type outline
	Specification sheet
	Artwork approval
	Proofs
	Final printing

Note: Students considered printing technicalities for taking design decisions throughout the course.
Some intermediate tasks under each stage were iterative and not necessarily in the same sequence

End Product

The end product is a result of an act of designing that employs the design process. The course resulted in four books designed by students for Institute's library. The books were elaborate with the number of pages ranging from 188- 368. These books represented the solution proposed by the students that reflected the development of their knowledge.

RESULT AND DISCUSSION

This segment presents the research findings in four sections-teamwork, interpersonal, communication, and project management skills. Table 2 - Table 5 report the result of the questionnaire and semi-structured interviews. Group A interview participants are referred to as Participant A1, Participant A2, Participant A3, Participant A4 with the same coding method followed for all the groups. There is a discussion of, to what extent collaboration over the project under PBL fostered essential professional skills amongst learners.

Section A - Teamwork

Table 2 presents the integrated result of Section A on teamwork.

Table 2. Integrated results for theme - teamwork

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
A1. I was able to achieve much more in a group than what I would have managed alone	51.5%	33.3%	12.1%	3.0%	0.0%
Participant B3: "Working in a group is helpful. If I think of doing this book on my own, I will never be able to produce this kind of result on my own."					
A2 Good teamwork is essential for the success of a project	57.6%	33.3%	9.1%	0.0%	0.0%
Participant B3: "There were some four hundred pages which were in the book. We wouldn't have been able to do it if there was no proper synchronization in the group."					
A3. All members of the group shared the team's responsibilities	15.2%	48.5%	36.3%	0.0%	0.0%
Participant A1: "One or two people who were not enjoying it as much so we were basically bringing out their best and pushing them."					
A4. Each member of the group was encouraged to give inputs	33.3%	45.5%	18.2%	3.0%	0.0%
Participant B2: "I feel like we all had different skill sets we could bring together all of that diverse skills in the book."					
A5. Mutual exploration and constructive feedback from group members led to better understanding concepts	39.4%	48.5%	12.1%	0.0%	0.0%
Participant C3: "We had different opinions also; it helped us in learning new things. If someone has a different opinion, we would argue or maybe discuss with each other, we got different viewpoints to implement and make our work better."					
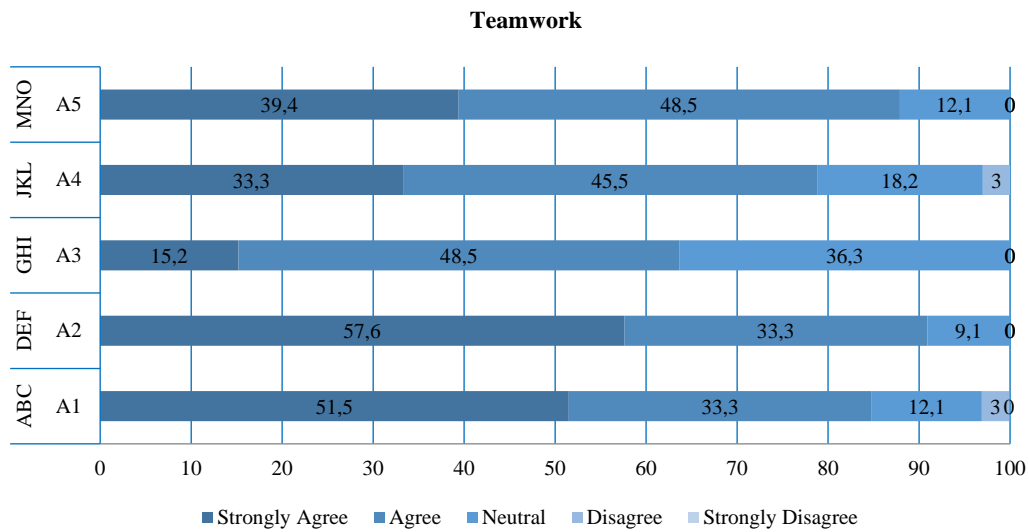
Figure 2. Presentation of quantitative data for teamwork

Students were asked to respond to questions related to teamwork (A1) 84.8% agreed they could achieve much more in a group than what they would have managed alone, and 84.8% agreed that for the success of a project, good teamwork is essential (A2). When asked if all group members shared the team's responsibilities, 36.3 % gave a neutral response. However, 63.7% agreed with the statement (A3). Each group member was encouraged to give inputs 78.8% of respondents agreed with the statement (A4). The majority of respondents -87.9% agreed that mutual exploration and constructive feedback from group members led to a better understanding of concepts (A5).

Findings show that students managed to work successfully in groups to achieve desired results in project work. However, some concern is noticed regarding the equal participation of group members. In statement A3, 36.3% of students have taken a neutral position. The response of participant A1 in the interview suggests that there may have been some students who were not as motivated as others and needed a push to work towards set goals.

Section B - Interpersonal Skills

Table 3 presents the integrated result of Section B on interpersonal skills**.**

Table 3. Integrated results for theme - interpersonal skills

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
B1.Working in the group helped me to build closer connections with group members	39.4%	39.4%	18.2%	3.0%	0.0%
Participant A3: "Group projects help develop personal relationships with other people."					
B2. We were able to resolve differences and reach to decisions	36.4%	45.5%	18.2%	0.0%	0.0%
Participant B2: "We resolved all of the problems within the group and I think the group dynamics were nice."					
B3. Working in a team helped me in building rapport with fellow students	33.3%	57.6%	9.1%	0.0%	0.0%
Participant C3: "We also build a very good connection with each other."					
B4. I learnt to respect different voices in the group.	48.5%	51.5%	0.0%	0.0%	0.0%
Participant B2: "I feel like all of us were quite respectful of the other person and understood when the point was justified so we worked well."					

Interpersonal Skills
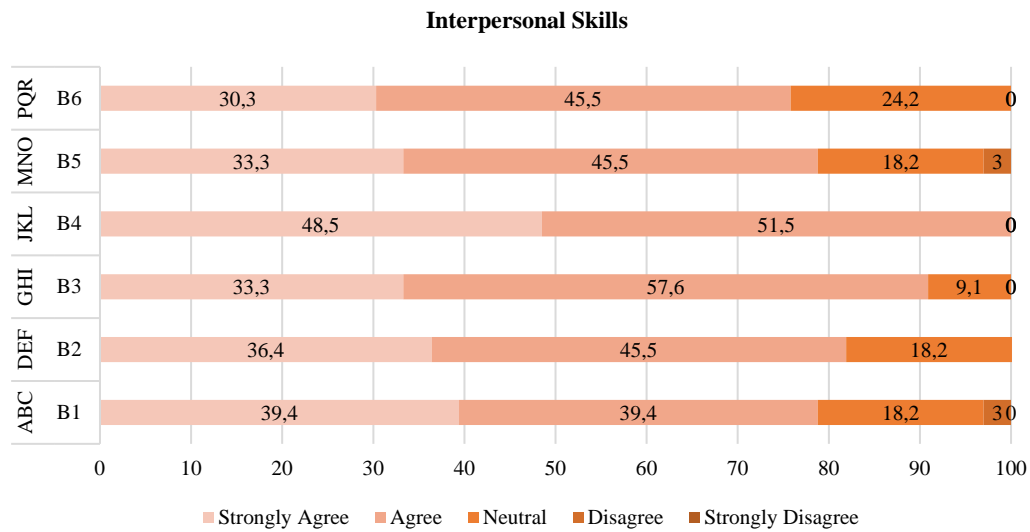
Figure 3. Presentation of quantitative data for interpersonal skills

The student sought a response to four statements to ascertain the development of interpersonal skills. The majority of the respondents or 78.8% agreed that working in the group helped them to build closer connections with group members (B1). A total of 81.9% of respondents agreed that they were able to resolve differences and make decisions (B2). Most respondents (90.9%) agreed that working in a team helped build rapport with fellow students (B3). All respondents, 100% agreed that they learned to respect different voices in the team (B4). The findings of this section suggest the development of interpersonal skills as an outcome of working together. Students learned to be respectful of others' opinions and perspectives.

Section C - Development of Communication Skills

Table 4 presents the integrated result of Section C on communication skills.

Table 4. Integrated results for theme - development of communication skills

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
C1. I got opportunities to articulate my own point of view in the group	48.5%	51.5%	0.0%	0.0%	0.0%
Participant A2: "During the discussions, everybody was vocal including me."					
C2. I was able to resolve conflicts through discussions and negotiations	36.4%	51.5%	12.1%	0.0%	0.0%
Participant C3: "We had managed to sit together and resolve the conflicts by discussing what all problems we were facing while combing the sections."					
C3. My group members listened well to each other's ideas	36.4%	51.5%	9.1%	3.0%	0.0%
Participant A2: "Even if the thing was not relevant everybody used to listen and that builds the confidence."					
C4. There was good communication amongst group members.	18.2%	54.5%	24.2%	3.0%	0.0%
Participant C3: "We all managed to take out time and discuss everything."					
C5. I was able to communicate effectively with peers in my team	36.4%	54.5%	6.1%	3.0%	0.0%
Participant C2: "We brought the idea to the table and then that idea was discussed. So, it was almost like we are presenting every time our ideas."					

Communication Skills
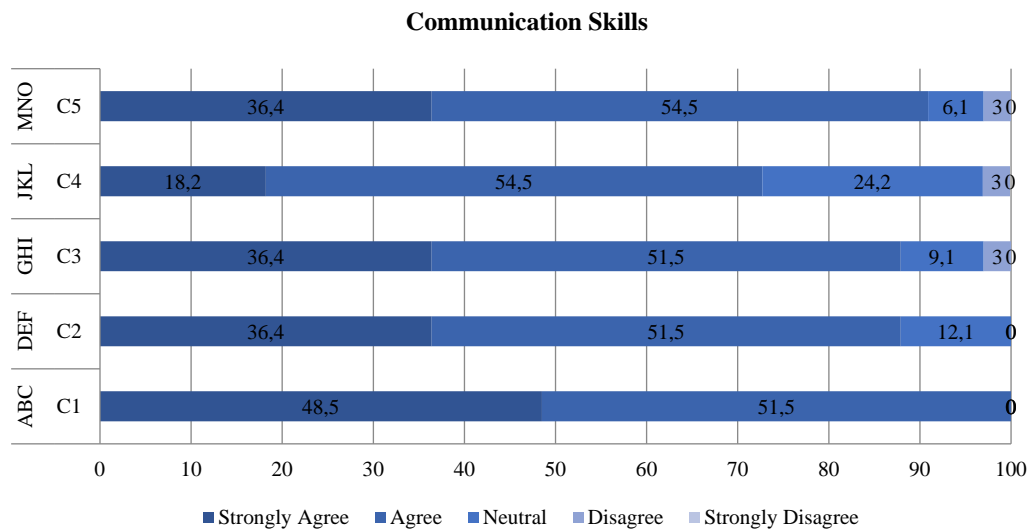
Figure 4. Presentation of quantitative data for communication skills

All (100%) respondents agreed they got opportunities to articulate their point of view in the group (C1). Most respondents, 87.9% agreed that they were able to resolve conflicts through discussions and negotiations (C2). The majority of the respondents, 87.9% agreed that their group members listened well to each other's ideas (C3). The majority of the respondents, 72.7% agreed that there was good communication amongst group members (C4). Findings show that 90.9% agreed that they could communicate effectively with peers in the team (C5).

Collaborative learning kept learners actively engaged and presented opportunities to discuss, articulate, defend ideas, exchange viewpoints, and broaden thought horizons. They developed the patience to listen and respect others' perspectives during the design process. In Statement C4, 24.2% of respondents took a neutral position when asked if there was good communication amongst team members. There is a little communication gap evident here. Close monitoring of the group activities and intervention of the instructors at the right time can help tackle communication gaps.

Section D – Goal-setting and Project Management Skills

Table 5 presents the integrated result of Section D on Project Management Skills.

Table 5. Integrated results for theme – goal-setting and project management skills

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
D1. We were able to plan and manage our work well	24.2%	51.5%	18.2%	6.1%	0.0%
Participant A1:"We used to literally list down everything we had to do in a day and then we had our stations so we used to go to our stations and work."					
D2. We managed to finish all our tasks to meet project deadlines	21.2%	51.5%	24.2%	3.0%	0.0%
Participant D1: "Goal-setting was done throughout the course but there were certain goals that we could not achieve on time like we had planned. So for those we put in some extra hours and some extra days."					
D3. Goal-setting helped me to learn to manage my time.	27.3%	54.5%	12.1%	6.1%	0.0%
Participant C3: "For the first half I had to do illustrations and Smith would do the layout, and in the second half I would work on the layouts and Smith would work on the illustrations. This is how we managed our time."					
D4. I was able to overcome hurdles and difficulties to reach the final goal of book design	24.2%	72.7%	3.0%	0.0%	0.0%
Participant D2: "We were setting up daily goals but some days there were technical issues with software and there were conceptual issues and general issues but by the end, everything was done nicely."					
D5. The project increased my understanding of how to plan, manage my time	36.4%	51.5%	9.1%	3.0%	0.0%
Participant D3: "Two of us were in editing and compiling the information so we made a Google document amongst ourselves and divided the topics so we could both work simultaneously and proofread our own work so that it was faster."					

Goal-setting and Project Management Skills
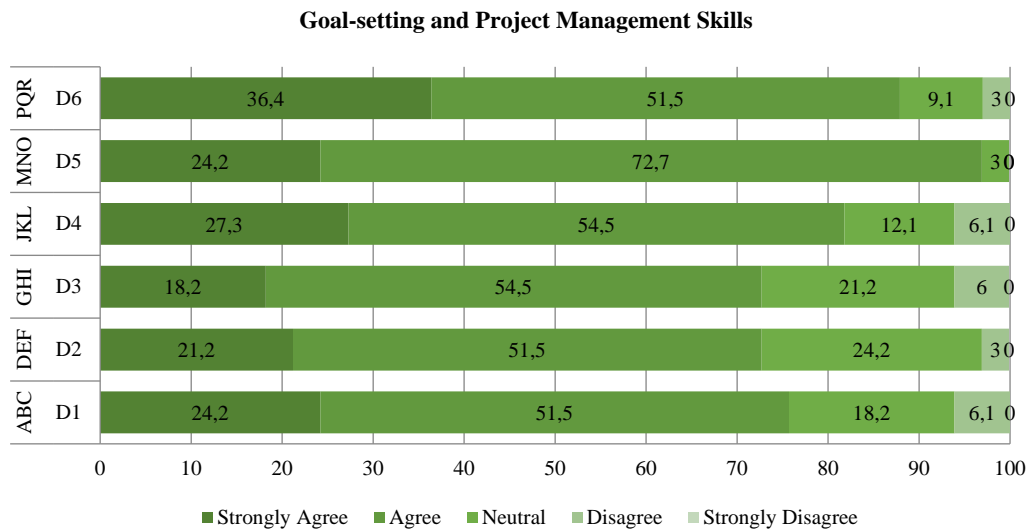
Figure 5. Presentation of quantitative data for goal-setting and project management skills

Students were asked to respond to questions related to developing project management skills; 75.7% of respondents agreed that they could plan and manage their work well (D1), and 72.7% agreed that they managed to finish all their tasks to meet project deadlines (D2). A vast majority of participants, 81.8% agreed that goal-setting helped them to learn to manage time (D3). Findings reflect that most of the respondents, 96.9% agreed that they were able to overcome hurdles and difficulties to reach their final goal (D4). In addition, 87.9% admitted that the project increased their understanding of planning and managing their time (D5).

The study results show that the participants understood the scale of the project, its complexity and the importance of project planning and management. They filled in for others in emergencies. This indicates a very mature and responsible behaviour on the part of learners where the focus was on the goal accomplishment rather than getting deterred by diverging situations. Goal-setting and good project management helped achieve desired results.

Discussion of Semi-structured Interview

The interview process led to a much deeper understanding of participants' perceptions and helped to understand the quantitative data. The results of the quantitative and qualitative phases support and complement each other well and there were no contradictions found. The quotations of the interview participants discard any doubt regarding the effectiveness of collaboration under PBL in developing essential professional skills. The responses strongly support the development of teamwork, communication, and interpersonal skills. Participants' responses reflected the desired goals were reached through project planning and setting a timeline for tasks.

CONCLUSION

Future graphic designers must enter the workspace well equipped with design skills and skills to collaborate, communicate, plan & organize work, and resolve interpersonal conflicts. Graphic designers no longer work in isolation. They collaborate over projects with multidisciplinary teams analysing problems from different vantage points, applying disparate skills. Findings of the study indicate that under PBL, students are getting equipped with essential professional skills needed in the twenty-first-century work environment. Collaboration with peers in PBL creates an environment for developing a repertoire of skills useful in the workplace. Thus, it is an important vehicle to develop some important skills for future graphic designers. It is evident that participants utilised individual strengths to make a valuable contribution and seemed satisfied with the heterogeneous skills group. Conversely, it can be argued that a proper balance is required on the part of the

instructors so that while learners utilise their strengths optimally, they also come out of their comfort zones to explore different learning materials adequately.

Tolerance and respect are essential aspects of living in a community. Connecting, communicating, and understanding varied viewpoints contextually to solve problems are critical for designers. Tolerance and respect are essential character traits fostered in collaborative pursuits. It was evident that the project of the given scale was possible due to the collaborative format of different minds working together allowing learners to break away from the linear thought process. It can be argued further that proper monitoring of group working mechanisms needs to be in place to ensure equal participation of each group member. Some literature uses the term *free riding.* It refers to the students who take advantage of being in a group and avoid working adequately or contributing their part. This behaviour can be demotivating and frustrating for others who share the credit of their hard work with some defaulters. Thus, in a group situation, the timely intervention of the instructor is imperative for proper group management. Nonetheless, students' responses indicated that PBL indeed fostered the development of essential professional skills by allowing working in collaboration on authentic tasks that offered adequate challenges that resulted in concrete outcomes.

Authors' Contributions

The author contributed 100% to the study.

Competing Interests

There is no potential conflict of interest

Ethics Committee Declaration

The Institutional Ethical Committee, Nirma University reviewed and approved the project titled "Graphic Design Education: Generating Real-world Design Opportunities within Academic Institutions to Foster Learning and Facilitate Easier Transition from Academics to Industry". Project No.: IEC/NU/22/ID/01. This paper is an outcome of the aforementioned study.

REFERENCES

Ananiadou, A., & Claro, M. (2009). *21st century skills and competences for new millennium learners in OECD countries.* OECD Education Working Papers No. 41; OECD Education Working Papers. https://doi.org/10.1787/218525261154

Bell, S. (2010). Project-based learning for the 21st century: Skills for the future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *83*(2), 39-43. https://doi.org/10.1080/00098650903505415

Blumenfeld, C. P., Soloway, E., Marx, W. R., Krajcik, S. J., Gusdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. In *Educational Psychologist, 26*, 369-398. https://doi.org/10.1080/00461520.1991.9653139

Boss, S., & Krauss, J. (2014). *Reinventing project-based learning: Your field guide to real-world projects in the digital age*. International Society for Technology in Education.

Buckler, V. (2019, February 15). The benefits of collaboration in project-based learning. *Magnify Learning*. https://www.magnifylearningin.org/project-based-learning-blog/the-benefits-of-project-based-learning-collaboration (19.03.2020).

Deci, L. E., & Rayn, M. R. (1987). The support of autonomy and control of behaviour. *Journal of Personality and Social Psychology*, *53*, 1024-1037. https://doi.org/10.1037//0022-3514.53.6.1024

Donnelly, R., & Fitzmaurice, M. (2005). Collaborative project-based learning and problem-based learning in higher education: A consideration of tutor and student role in learner-focused strategies. In G. O'Neill, S. M. Moore, & B. McMullin (Eds.), *Emerging Issues in the Practice of University Learning and Teaching* (pp. 87-98). AISHE/HEA. http://www.aishe.org/readings/2005-1/collection.pdf

Ellis, T. J., & Hafner, W. (2007). Assessing collaborative, project-based learning experiences: Drawing from three data sources. *2007 37th Annual Frontiers in Education Conference - Global Engineering: Knowledge without Borders, Opportunities without Passports*, T2G-13-T2G-17. https://doi.org/10.1109/FIE.2007.4418028

Ellmers, G. (2014). Graphic design education: Fostering the conditions of transfer in a project-based and studio-based learning environment, through a structured and critical approach to reflective practice [Doctor of Philosophy Thesis, University of Wollongong]. University of Wollongong Thesis Collection. https://ro.uow.edu.au/theses/4189/

Fallows, S., & Steven, C. (2000). Building employability skills into the higher education curriculum: A university-wide initiative. *Education + Training*, *42*(2), 75-83. https://doi.org/10.1108/00400910010331620

Gokhale, A. A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, *7*(1). https://doi.org/10.21061/jte.v7i1.a.2

Jones, B. (2019). Good practice: Scaffolded, collaborative project-based learning. *Journal of the European Honors Council*, *3*(1), 1-16. https://doi.org/10.31378/jehc.85

Kapp, E. (2009). Improving student teamwork in a collaborative project-based course. *College Teaching*, *57*(3), 139-143. https://doi.org/10.3200/CTCH.57.3.139-143

Kivunja, C. (2014). Do you want your students to be job-ready with 21st century skills? Change pedagogies: A pedagogical paradigm shift from Vygotskyian social constructivism to critical thinking, problem solving and Siemens' digital connectivism. *International Journal of Higher Education*, *3*(3), 81. https://doi.org/10.5430/ijhe.v3n3p81

Kuh, D. G. (2008). *High impact educational practices*. Association of American Colleges and University. https://provost.tufts.edu/celt/files/High-Impact-Ed-Practices1.pdf

Lepper, M. R. (1988). Motivational Considerations in the Study of Instruction. *Cognition and Instruction*, *5*(4), 289-309. https://doi.org/10.1207/s1532690xci0504_3

Organisation for Economic Co-operation and Development (OECD). (2018). *The future of education and skills, education 2030*. OECD. https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf

Race, P. (2007). *The lecturer's toolkit: A practical guide to learning, teaching & assessment* (3rd Edition). Routledge.

Scaffolding Definition. (2013, November 8). The Glossary of Education Reform. https://www.edglossary.org/scaffolding/ (24.10.2021).

Smith, L. B., & MacGregor, T. J. (1992). What is collaborative learning? In *Collaborative learning: A sourcebook for higher education* (p. 12). National Center on Postsecondary Teaching, Learning, and Assessment at Pennsylvania State University. https://www.researchgate.net/publication/242282475_What_is_Collaborative_Learning

The Future of Jobs Report 2020. (2020). World Economic Forum. http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf (28.10.2020).

Wang, S.-Y. S. (2006). Identification of the significant competencies in graphic design [PhD, University of Missouri, Columbia]. https://doi.org/10.32469/10355/4332

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Research Article

Design studio final product evaluation rubric in interior architecture education: Eskişehir Technical University case

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Abstract
This study aims to develop an objective evaluation tool to evaluate final products in interior architecture design studios. Design studios generally apply personal evaluation methods or those predetermined by institutions to evaluate final products. However, such evaluations are often known to be far from being objective. In such evaluations, final product information might lead to a different value judgement that changes from person to person. Thus, a clear, accountable, fair, and objective evaluation tool developed according to this purpose might enable students and course instructors to evaluate themselves. In addition, subjective evaluations can be avoided. This study aims to develop a rubric to ensure an objective and fair evaluation of students' products. Thus, the evaluation criteria used in this rubric were determined through the analysis of the data obtained from the forms sent to the instructors working in different universities and from the evaluation criteria used by the jury members. Under the light of these data, a new rubric was developed for each design studio group. Different jury members in different juries were asked to use two of these rubrics to provide some feedback about them.

Keywords: Design Studio, Value and Evaluation, Final Product Evaluation, Measurement and Evaluation in Education, Rubric

Extended Abstract

Introduction: In design studios of interior architecture education, students produce interior design projects about given space, user, and function. The instructor or a jury member evaluates produced final projects. Evaluations can be subjective and cannot be questionable and fair. So, this study needed to prepare an objective, fair, questionable and transparent evaluation criteria tool. The grade is a sort of evaluation information due to the interaction and relationship between the subject and the object. The subject uses objects when he needs them, which is meaningful because of their relationship. The subject uses object when he needs it, so this is meaningful because of the relationship between them. At this time, we can talk about value. Kuçuradi (2016: 9) emphasizes this value characteristic: "Value is subjective and the value of an object changes from person to person. Value of an object is something that evaluator assigns to it; when evaluator and time of evaluation changes, the value of this object may also change". All abstract and concrete objects might have a value or not, depending on the evaluator. For example, there is a pencil on the table. If the pencil on the table provides convenience for the user, that pencil is valuable for the user or evaluator. The situation is a bit different for abstract values.

When we talk about the value of an artwork, we refer to its technique, style or other characteristic properties. Social, political, and cultural contexts involved in the work of art and the date when it is created may lead to the subject perceiving the work as a value and evaluating it differently. So, an objective evaluation of one particular action by more than one person is possible only when they use a common measure or criteria.

The course instructor often uses either his or the institution's method while evaluating. However, positive or negative personal relationships with students affect this evaluation process. Evaluation is an important part of education. In education, it is named measurement and evaluation. The study examines the educational process of the design studio, the development of the final product and its evaluation, and measurement and evaluation methods used in education. Shepard (2000: 4) sees evaluation as a teaching process that supports and improves learning. The concrete result of evaluation in education is grade. The essence of grade in education is due to the necessity of evaluation. Therefore, the evaluation process, i.e. grades, has the following functions in education. It informs students about how to change their behaviors; motivates students for school work; forms a basis for the decisions about students; informs teachers about the effectiveness of teaching; guides teachers and the counseling unit while designing their services and their contents; helps students evaluate their development (Turgut and Baykul, 2015: 354). An accurate decision in evaluation depends on error-free and objective measurement. Therefore, examining measurement and evaluation tools in line with teaching objectives and deciding on the most suitable tool can be the right action to take in educational program design. Performance-based measurement and evaluation differ from other measurement tools; it is especially difficult to evaluate music, sports or art achievements or those involving visual components. Since technical skills, use of equipment and reflection on one's learning is quite important in achievement-based educational programs; it is also difficult to measure and evaluate such skills. Alternative evaluation methods (achievement evaluation) can focus on students' aesthetical, critical and creative thinking skills ranging from understanding design to practicing it (Mamur, 2010: 184). The research on evaluation reveals that using a rubric is the most objective method in evaluating final products in art education. Rubrics are classified into two categories according to their purpose of use. Holistic rubrics evaluate achievements from a holistic perspective without considering subcomponents. Analytical scale rubrics are more detailed than holistic ones. Each task or responsibility is evaluated according to certain criteria. Errors and missing information cannot be ignored because they are very detailed. Therefore, they are more objective. Based on the idea that rubrics are objective evaluation tools, this study aims to develop a rubric to evaluate the final products of design studio courses in interior design education.

Purpose and scope: The aim of this study is to ensure that instructors make transparent, objective, fair and accountable evaluations, encourage them to evaluate their teaching methods, give students the opportunity to evaluate their development, to see their rank in the classroom and realize their shortcomings and mistakes, guarantee a healthy evaluation process. Internal architecture design studios have developed an evaluation tool based on the abovementioned aims.

Method: In accordance with this purpose, the study is designed the study was designed as qualitative research in four stages. In the first stage, the "Final Product Evaluation Criteria Information Form for Design Studio Course (ECIF)" is formed to receive the instructors' opinions about the evaluation criteria of design studios in interior design education. Secondly, it was planned to observe a design studio in interior design education and save the instructor's evaluation criteria. So, it was recorded as a video with a camera. In this part, the evaluation criteria were coded and analyzing with Nvivo12. And then, the rubrics were developed according to the data gained in the first and second part of this study. Seven jury members used the prepared rubrics were used in the final juries of five project groups at Eskişehir Technical University. Lastly, the researchers prepared semi-structured interview questions to obtain the seven jury members' opinions about the rubrics. The rubrics were revised according to their feedback.

Findings and conclusion: At the end of this study, the evaluation criteria for Interior Design Studio 1, 2, 3, 4, 5 and 6 and prepared rubrics with the criteria. The criteria were grouped under three headings as design (50%), implementation (30%) and presentation (20%), and were proportioned according to the data obtained. After the jury members used the rubric which includes these criteria, their opinions were reached by semi-structured interviews. They used the following adjectives to describe the rubric: rational, fair, complex, objective, effective, time-saving, comprehensive, sufficient and up-to-date.

Keywords: Design Studio, Value and Evaluation, Final Product Evaluation, Measurement and Evaluation in Education, Rubric

INTRODUCTION

This study focuses on determining evaluation criteria to be used in the evaluation of final products of design studio courses in interior architecture education, which mainly aims to teach the basic practical processes of

the occupation such as design, application and organization. Therefore, design studio courses are the most comprehensive courses combining design and application practices in one final product according to the aim mentioned above. The name design studio comes from the place where these courses are given. *Studio* is defined as "the physical environment where both design education and teaching activities and cultural and pedagogical activities take place" (Crowther, 2013: 19). Schön defines a design studio as the heart of educational programs since it is based on the simulation of real problems and situations and *learning by doing* experiences (Schön, 1985). "Design studios are the environments where designers spend most of their time, talk and discuss about design methods and principles the most" (Ketizmen, 2003: 32). "In many programmes, design students take ten or more studio courses in preparation for entering their chosen profession" (Smith & Smith, 2012: 92).

In design studio courses, students design interior space for a predetermined user within a lesson plan framework to make it a functional, aesthetic and practical one. The final product is evaluated by the instructor or a jury which also involves the instructor. "Summative evaluation and assessment is a summation of achievement at the end of a process and/or the completion of a product" (Barrett, 1990: 301). Thus, students have the chance to evaluate their own developments and their positions among other students taking the course and realize their mistakes and shortcomings. In the end, the grade received here is a sort of evaluation information, due to the interaction and relationship between the subject and object. Of these two concepts, the knower is *subject*, and known or what needs to be known is *object* (Uçak, 2010: 709). The subject uses object when he needs it, which is meaningful because their relationship. As Ülken said:

> We use some of them (things, entities etc) because they are useful for us; or when we use a hill as a landmark to find a specific destination, it is no longer "that-entity", it becomes "sign" of a direction or movement. That is why it gets a meaning... Thus, majority of particular and various empiric entities are classified as 'meaningful' and "understood" things depending on their relationship with us. (Ülken, 2016: 20)

If known information about an object is meaningful for a subject, we can talk about its *value*. The presence of a pencil on a table is known information and does not need any interpretation, i.e. this information is objective and unbiased; however, *the presence of the pen on the table is useful for me* is meaningful for the subject. In other words, the presence of the pen on the table is assigned a value for the subject and it becomes subjective information. William Frankena explains *value* in two different ways: abstract and concrete. Accordingly, abstract value is descriptive, while concrete value is "evaluated or judged to be valuable" (Kılıç cited by Frankena, 1967). Kuçuradi (2016: 9) emphasizes this value characteristic: "Value is subjective and the value of an object changes from person to person. Value of an object is something that evaluator assigns to it; when evaluator and time of evaluation changes, the value of this object may also change".

All abstract and concrete objects might have a value or not, depending on the evaluator. The usefulness of the pen on a table is the value given to a concrete situation by the evaluator. The situation is a bit different for abstract values. A work of art might be perceived as a concrete product; however, the value given to a work of art is related to its technique, style and other abstract characteristics. Different values are due to the interaction between the subject- i.e. the one who consumes the object - and the one that has a relationship with it. Social, political, and cultural contexts involved in the work of art and the date when it is created may lead to the subject perceiving the work as a value and evaluating it differently.

Kuçuradi suggests that evaluation occurs in three different ways. First, the evaluator sees the value in the object, second he ascribes a value to the evaluated object and third he assigns a value to the object (Kuçuradi, 2016: 7). As for objective evaluation, Erinç (2004: 141) states: "It is not possible to talk about a criticism that is not based on criteria" and Aristoteles states: "No change is possible without equality and no equality is possible without measurability with a common measure" (Selik, 2016: 36). An objective evaluation of one particular action by more than one person is possible only when they use a common measure or criteria. In addition, it is impossible to make an objective evaluation without freeing oneself from his emotions and understanding the essence of a person/case and object and the situations it leads. Therefore, transition from subjectivity to objectivity in any evaluation process is possible with predetermined criteria.

Evaluation is an important phase of education that displays students' achievement. The course instructor often uses his or the institution's method while evaluating. However, positive or negative personal relationships with

students affect this evaluation process. This study aims to develop an evaluation tool that will enable course instructors or jury members to make unbiased, transparent, fair and accountable evaluations. Students question their scores and incomplete knowledge and skills, realize their mistakes and compare themselves to others. Accordingly, the study examines the educational process of design studio, the development of the final product and its evaluation as well as measurement and evaluation methods used in education.

Interior Design Studio and Final Product Evaluation

Design studios provide an environment where all the phases of the design process ranging from problem identification to the final product, are taught/learned according to *learning by doing* philosophy. The design studio is the central mode of teaching art and design today. "Essentially it remains a shared place in which students are given practical tasks and projects to solve either individually or collaboratively and where students share their solutions or development processes with other students" (Park, 2011: 177).

The design process occurs in three phases: problem identification, finding solutions and solution analysis. The process continues until the designer makes his final decision (Kurt, 2009: 403). Revisions might be made and changes might be applied until this final decision. The steps of the design studio course and design process are parallel. According to Botti-Salitsky's (2005) interior architecture education model, any design process in a design studio course starts with analysis, just like in all design processes, followed by planning based on feedback, schematic drawing, design development and application project. In the design studio, students are expected to find solutions to predetermined design problems, through which they learn about the process. In the end, they are evaluated to determine their knowledge level.

Variety in evaluation types and tools play a significant role in helping design students evaluate themselves in terms of their conceptual and practical knowledge. "A problem, task or project allows students to evaluate their own learning and creates a bridge between what students have learned and how it can be used in practice" (Park, 2011: 178). At the end, students are criticized for their final products. As for the historical development of such final evaluations, we know that evaluations used to be made behind closed doors and students took their projects back together with just some comments and a grade in Beaux Art while the evaluation process was more comprehensive and organized like an educational activity in Bauhaus (Botti-Salitsky, 2005: 32, 33). Today, the course instructor determines course objectives, outcomes, requirements and evaluation criteria for design studio courses. Kurt defines this process as *design of project evaluation*. The final product is evaluated through presentations and discussions at the end of the semester instead of assessing through assignments or tests (Oh et al., 2013: 302). In other words, such an evaluation process is quite different from other theoretical courses and different methods are used for evaluation purposes.

Juries and evaluation procedures replace theoretical exams in design studio courses (Martinez, 2003, as cited in Gül, 2016) Since the structure of design studio courses is quite different from other courses, a comprehensive and detailed evaluation is essential. "Evaluating design creativity is one of the most important issues in design and architecture programs" (Casakin and Kreitler, 2008: 666). Design studio instructors evaluate designs according to tools they use to represent and communicate information or according to their perspectives instead of evaluating the quality of designs (Casakin and Kreitler, 2008: 668).

Oh et al. (2013: 307) stated that juries are formed as an activity at the end of design studio courses. According to Çıkış and Çil, one student or a group of students presents their projects in front of a jury and receive feedback about them. Jury members are design studio course instructors or those who actively work as interior architects. The jury evaluates the final product according to course outcomes and asks some questions to students (Çıkış and Çil, 2009: 2105). The jury is considered the most practical environment that enables students to communicate with people working in interior architecture. Students come together with professionals and learn about design and application relationships.

The jury assigns a final product grade to students at the end of the evaluation; however, the only aim of jury evaluation is not to give a grade, it also aims to:

- Teach students how to evaluate their designs
- Encourage all the students to learn together

- Teach them how to make presentations, talk effectively and observe professional talents (Oh et al., 2013: 307).

Design-based disciplines use different evaluation processes from other disciplines, although the common aim for all disciplines is to determine students' knowledge level. This process is *called measurement and evaluation*. According to Aktaş and Alıcı (2017), measurement and evaluation aim to determine students' knowledge level before teaching, whether they have necessary knowledge and skills so that the course instructor can determine the content to be presented, diagnose problems and mistakes in learning and provide guidance when necessary. "Measurement, in the broadest sense, is about presenting observation results as numbers or other quantitative symbols. Measurement can be defined as "quantification of a quality" (Turgut and Baykul, 2015: 69). Observation can be defined as "information obtained through observations"; measurement results as "quantitative expression of the information"; the criterion as "a norm that help reaching a certain value judgement by commenting on measurement results"; and evaluation as "value judgement or decision made by commenting on measurement results according to certain criteria". This process, which starts with measurement and ends with evaluation, is called evaluation process. Evaluation is the last but the most important phase of teaching. Shepard (2000: 4) sees evaluation as a teaching process that supports and improves learning. The concrete result of evaluation in education is grade. The essence of grade in education is due to the necessity of evaluation.

Therefore, evaluation process, i.e. grades, has the following functions in education: It

- Informs students about how to change their behaviors.
- Motivates students for school works
- Forms a basis for the decisions about students
- Informs teachers about effectiveness of teaching
- Guides teachers and the counselling unit while designing their services and their contents
- Helps students evaluate their development (Turgut and Baykul, 2015: 354).

Griffin suggests that evaluation becomes more meaningful when it is integrated into the teaching process (Griffin, 1991: 4). Thus, it is possible to provide effective education by implementing an accurate and effective evaluation process.

Tekindal (cited by Ertürk, 2017) examined evaluation under three main titles; random and regular, goal-based and criterion-based evaluation. In random evaluation, evaluation is done without a predetermined plan and criteria, while regular one involves a more planned and more controlled evaluation. The goal-based evaluation aims to determine students' current status, make them aware of their mistakes and shortcomings and improve the process, make a final decision about the final product of the educational process or students' developments and provide them with necessary feedback. There are two types of criterion-based evaluation; absolute evaluation uses a predetermined criterion called 'absolute criterion' and evaluation result of each individual is independent from the community, class and group etc. In relative evaluation, "evaluators use a criterion determined in advance according to measurement results, and measurement result of each individual is affected by the class, community etc. Thus, each individual should care about other individuals' evaluations" (Güler, 2018: 13).

Many evaluation tools have been developed for different purposes in the abovementioned evaluation types. These tools are portfolio evaluation, self-assessment, peer assessment, group assessment, rubrics, concept maps, checklists and interviews. One or several of these evaluation tools might be preferred according to the content and objectives of the education program. It is also claimed that there are three different approaches to determining students' knowledge level; first, students evaluate themselves through self-comparison; second through comparison to other classmates; and third, by comparing to predetermined criteria (Mamur, 2010: 180).

An accurate decision in evaluation depends on error-free and objective measurement. Therefore, examining measurement and evaluation tools in line with teaching objectives and deciding on the most suitable tool can be the right action to take in educational program design. Performance-based measurement and evaluation are different from other measurement tools; it is especially difficult to evaluate music, sports or art achievements

or the achievements that involving visual components. Since technical skills, use of equipment and reflection of one's learning are quite important in achievement-based educational programs, so it is also difficult to measure and evaluate such skills. Alternative evaluation methods (achievement evaluation) can focus on students' aesthetical, critical and creative thinking skills ranging from understanding design to practicing it (Mamur, 2010: 184). The research on evaluation reveals that using a rubric is the most objective method in evaluating final products in art education. Güler (2018: 99) stated that rubrics are important because they make objective evaluation of subjective achievements possible.

Graded scoring keys (rubrics) consist of three sections; evaluation criteria, criteria descriptors and grading strategy:

- Evaluation criteria are about determining the objectives regarding the product or the process to be graded.
- Criteria descriptors define observable characteristics required in students' products or achievements
- Grading strategy is about defining and grading different levels of achievement (Popham, 1997: 74).

Rubrics are classified into two categories according to their purpose of use. Holistic rubrics evaluate achievements from a holistic perspective without considering subcomponents. They do not take too long to develop and are user-friendly. Some errors and missing information can be ignored due to the lack of subcomponents. It is more subjective compared to another rubric type. Analytical scale rubrics are more detailed than holistic ones. Each task or responsibility is evaluated according to certain criteria. Errors and missing information cannot be ignored because they are very detailed. Therefore, they are more objective. Based on the idea that rubrics are objective evaluation tools, this study aims to develop a rubric to evaluate the final products of design studio courses in interior design education.

METHOD

Aim

The aim of this study is to ensure that instructors make transparent, objective, fair and accountable evaluations, encourage them to evaluate their own teaching methods, give students the opportunity to evaluate their own development, to see their rank in the classroom and realize their shortcomings and mistakes, guarantee a healthy evaluation process. Based on the abovementioned aims, internal architecture design studios have developed an evaluation tool.

Methodology

This study was conducted in four phases according to the aims of the study by using qualitative research methods.

1. Developing "Final Product Evaluation Criteria Information Form for Design Studio Course (ECIF)", receiving feedback from experts and revision process
2. Observations through video recording in Design Studio 3 course and determining evaluation criteria used by jury members
3. Developing the rubric
4. Using the rubric in two different juries in two Design Studio courses and receiving feedback from jury members through semi-structured interviews.

Ethics committee approval dated 31.05.2017 and numbered 58061 was obtained by Eskişehir Technical University Ethics Committee.

Participants

The participants of the study are instructors and jury members. Instructors contributed to the study through their responses to "Design Studio Course Final Products Evaluation Criteria Information Form". The participant instructors were from 10 randomly chosen among 28 well-established universities (9 state and 19 foundation universities) that have been offering at least 10 years of interior design education, have competent

academic staff and play a leading role in interior design education. The criterion "10 years" was due to practicability of the study. The form was sent to 80 instructors in these ten universities. A total of 14 instructors responded to the form and the distribution of these replies for each university are as follows: Hacettepe University (1), Anadolu University & Eskişehir Technical University (1), Çukurova University (1), Çankaya University (1), Kocaeli University (2), İstanbul Technical University (3), Başkent University (2), Doğuş University (1), İzmir Economy University (2). Jury members were invited from different institutions to evaluate using the rubric developed for two different design studio course juries (Table 1).

Table 1. Information about the jury members

Jury member	The jury he/she attended	Work Place	Title
J1	Design Studio 2	Anadolu University	Research assistant
J2	Design Studio 2, 6	Self-employed	Interior architect
J3	Design Studio 2	Self-employed	Interior architect
J4	Design Studio 2	TOBB University	Assistant Professor
J5	Design Studio 6	Self-employed	Interior architect
J6	Design Studio 6	Self-employed	Interior architect
J7	Design Studio 6	Eskisehir Technical University	Assistant Professor

Overall Procedure

The study was conducted in four phases (Figure 1). In the first phase, "Design Studio Course Final Products Evaluation Criteria Information Form (ECIF)" was prepared. The form consists of three parts: the first part involves questions aiming to collect demographic information about the instructors; there are questions to obtain information about design studio courses offered in the university in the second part; and the third part involves open-ended questions aiming to obtain the instructors' opinions regarding final product evaluation criteria they use. The developed form was sent to experts for feedback, and later to the participant instructors via e-mail.
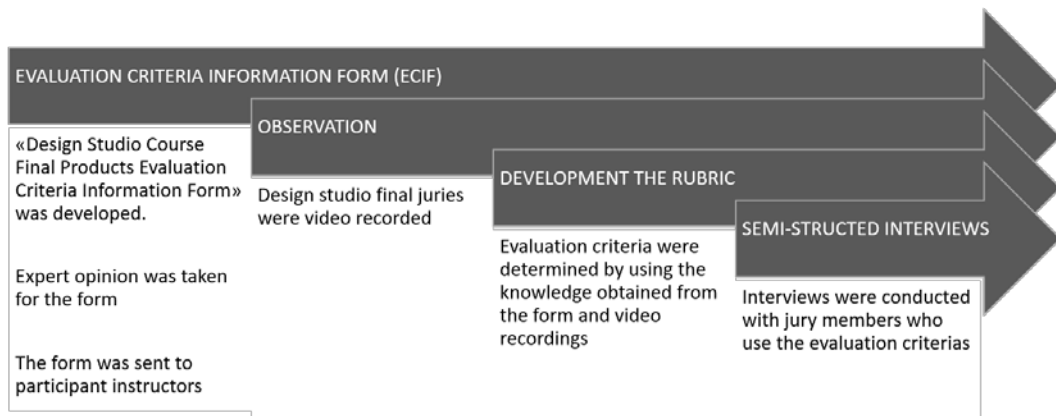
Figure 1. Overall procedure of the study

In the second phase, the final evaluation jury for Interior Architecture Project 3 (Design Studio 3) was observed in the 2018-2019 Fall Semester at Eskişehir Technical University Interior Design Department. The jury was also video recorded to avoid data loss. The video recording was later transcribed. In order to determine the criteria used by ten jury members, the data were coded and placed under certain themes by using Nvivo12 software.

In the third phase, the rubrics were developed to evaluate the final products of design studio 1, 2, 3, 4, 5 and 6 courses according to the data obtained in the first and second phases. Later, these rubrics were given to seven jury members in the final juries of five project groups in Eskişehir Technical University Department of Interior Architecture and an instructor who evaluated without being a jury member. In total, 7 jury members used the rubric.

In the fourth phase, semi-structured interview questions were prepared to obtain participants' opinions about the rubric. These questions were asked during the interviews conducted with 7 jury members. The rubrics were revised according to the feedback from the jury members and finalized accordingly.

FINDINGS

Findings related to Evaluation Process Information Form

The first part of the form collected demographic information about the instructors such as age, gender, graduation, work of place and work experience. The second part provided information about design studio courses. The average number of students in design studio courses is 25 (35.7%) and between 13 and 18 (28.6%). The weekly class hour is between 7 and 12 (78.6%). The content of design studio courses is determined by the instructors (78.6%). These contents often include topic, theme, function, goal, user profile, requirement program, location, requirements, study program, project outcomes, and evaluation criteria. Feedback during the course is+ often provided one-on-one (71.4%). Course instructors spend for each student 11-20 minutes (42.9%) and 21-30 minutes (35.7%).

The third part gives information about the evaluation criteria. As for evaluation methods, the following ones are preferred: individual (the course instructor) (7.1%); open jury (allowing other audience) (74.1%); closed jury (only jury members and design studio students) (21.4%). Percent 71.4 of the design course instructors who responded to the form stated that there is a relationship between the goal of design studio course and project final product evaluation criteria. Some of the comments regarding this issue are as follows:

> *Evaluation is done to make sure that targeted content is taught to students. In the final project of the semester, in which knowledge presented and practiced throughout the semester is applied as a whole, evaluation criteria are used in a way to test to what extent this information is acquired and applied successfully.*
> *Goal determines how evaluation will be carried out. For instance, if there is a conceptual goal in a project, detail drawings and technical drawings have only secondary importance in evaluation.*

The study revealed a direct relationship between course objectives and evaluation criteria. Among course objectives are transferring what students design to the plan and section; ability to think and draw in three dimensional way; understanding 1/50, 1/20, 1/10, 1/5, ½ and 1/1 technical rules and drawing; reading a project from plan and section; recognizing design colors, texture, material, accessory, lighting; understanding user-space-function relationships; working with a model; making presentations, developing their research methods, perceiving equipment elements; preparing installation and electrical system plans as well as lighting-ceiling plans; concept formation; designing an atmosphere; and forming material charts. According to the data obtained, this necessity of goal and outcomes becomes more important as we move from Design Studio 1 to 6.

Among the criteria are technical drawing rules, Presentation board arrangement, presentation, requirements, design idea, 3D presentation, cost, electricity, lighting, installation drawings, user-space-function relationship, model, detail information and applicability potential. It was found that cost criteria should be included in Design Studio 4, 5 and 6. The necessity of the presence of these criteria in Design Studio 5 and 6 is almost percent 100. It was found that these criteria should be considered together with objectives, and a criteria model should be formed accordingly. The design studio course instructors were also asked to report the criteria they think they should be included in the evaluation criteria. The suggested criteria included concept-final product relationship, project goal – developed concept and designed space relationship, interdisciplinary study skills, plans, section, views, ceiling design presentation board, wall building presentation board, flooring presentation board.

In addition, percent 85.7 of design studio course instructors stated that evaluation criteria should be included in students' project portfolio. Half of the design studio instructors stated that final product evaluation is both important and necessary, percent 28.6 necessary, percent 14.3 important and percent 7.1 not important. As for the replies by design studio instructors regarding the problems they face, percent 85.7 reported that they do not face any problems and percent 14.3 stated that they face some problems, which were quoted as follows:

I believe that the grade-range students are placed in do not reflect their real grade since grade ranges are quite narrow in our school. One of the biggest problems is that other jury members assign grades without taking evaluation criteria into consideration.

As for the effect of final product evaluation grade on students, the most common response was "Students can compare their own developments to other students (their position according to other students)". The following other options were stated by equal number of participants:

Students can compare their own developments to themselves; grades increase students' motivation; and students can see that they can apply what they learn.

Video Recording

After video recording data were transcribed, the sentences of jury members regarding evaluation were coded by using Nvivo12 software, which is used in qualitative research. The coding was based on the evaluation criteria used by jury members. The concepts related to evaluation criteria were first determined separately without main titles. Later, the related ones were placed under the code titles and a new code title was formed for each new concept. The criteria used by jury members are displayed in Table 2, which shows that the most popular title in the criteria are Design (44%). Application has a medium weight (30%) and Presentation (26%) is less important than other titles. These data were important in planning the rubric proposal.

Table 2. Coding data

Title	Frequency
DESIGN	70 (%44)
Integration of the idea into the project	27
Goal-concept-final product relationship	13
Originality of the Idea	12
Research and idea development	9
Creating Space-User-Function relationship	5
Problem Identification	3
Applicability	1
Interdisciplinary study skills	0
PRACTICE	48 (%30)
Plans	12
Conformity with technical drawing sizes	10
Sections	7
Lighting Plan	5
Details	4
Ceiling Plan	3
Material – Color - Pattern	3
Cost Sheet	1
Air Ventilation Plan	1
Electrical System Plan	1
Flooring plan	1
Installation Plan	0
PRESENTATION	42 (%26)
Presentation Board – Graphic Language	13
Perspective – Three dimensional drawing quality	13
Model	11
Presentation language	3
A Good Command of the Project	1
Requirements	1

The observation revealed that the jury members used the criteria under *Design* title the most, followed by *Application* and *Presentation* respectively. Also, the most commonly used three criteria under *design* title are integration of the idea into the project, goal-concept-final product relationship, and the originality of the idea. Similarly, the most frequently used three criteria under *Application* title are plans, conformity with technical drawing criteria and section. Finally, presentation board- graphic language, perspective-three dimensional drawing quality and model are the most common criteria under *Presentation* title.

Rubric

Following the analysis of the replies by design studio course instructors regarding evaluation criteria and the data obtained from the observation about the evaluation criteria used by jury members, rubrics were developed for design studio 1, 2, 3, 4, 5 and 6 (graduation) courses. The criteria for each project group were determined separately since each project group's objectives and outcomes are different. Design, Application and Presentation were determined as the main titles according to the criteria (Table 3).

Table 3. Design Studio 1 (D.S. 1), D.S. 2, D.S. 3, D.S. 4, D.S. 5, D.S. 6 final product evaluation criteria determined after evaluation criteria information form and observations.

		D.S. 1	D.S. 2	D.S. 3	D.S. 4	D.S. 5	D.S. 6
DESIGN	Problem Identification	✓	✓	✓	✓	✓	✓
	Research and Idea Development	✓	✓	✓	✓	✓	✓
	Originality of the Idea		✓	✓	✓	✓	✓
	Reflection of the Idea on the Project		✓	✓	✓	✓	✓
	The Relationship among Goal-Concept and Final Product					✓	✓
	Connecting Space-User-Function Relationship	✓	✓	✓	✓	✓	✓
	Material Selection		✓	✓	✓	✓	✓
	Design of Qualitative Elements				✓	✓	✓
	Applicability				✓	✓	✓
	Ability to Work Interdisciplinary					✓	✓
PRACTICE	Conformity with Technical Drawing Criteria (Sections)	✓	✓	✓	✓	✓	✓
	Conformity with Technical Drawing Criteria (Plans)	✓	✓	✓	✓	✓	✓
	Electrical System Plan			✓	✓	✓	✓
	Lighting System Plan			✓	✓	✓	✓
	Air Ventilation System Plan			✓	✓	✓	✓
	Ceiling Plan			✓	✓	✓	✓
	Floor Plan			✓	✓	✓	✓
	Installation Plan				✓	✓	✓
	Details			✓	✓	✓	✓
	Cost Sheet					✓	✓
PRESENTATION	Perspective / Render Quality	✓	✓	✓	✓	✓	✓
	Model Quality	✓	✓	✓	✓	✓	✓
	Presentation Order / Graphics / Language	✓	✓	✓	✓	✓	✓
	Ability to Express Oneself	✓	✓	✓	✓	✓	✓
	Requirements	✓	✓	✓	✓	✓	✓
	Good Command of The Project	✓	✓	✓	✓	✓	✓
	Forming Material Chart		✓	✓	✓	✓	✓

The percentages were determined as percent 50, percent 30 and percent 20 respectively according to the criteria obtained from observations and those used by jury members. It has been found that the outcomes and criteria of each design studio course differ according to the data obtained from the "evaluation criteria information

form". In this respect, a separate criteria list was formed for each design studio course (Table 4). The evaluation criteria rubric were formed according to five scale format:

0- If it lacks: If there are not any drawings related to the criteria or any presentation board that have knowledge value.

1- It exists but is not meaningful: When there is a drawing or presentation board related to the criteria but the content does not provide any information

2- Below average: if the drawing or presentation board related to the criteria have a value lower than average

3- Average: if the drawing or presentation board related to the criteria have an average value

4- Good but has some missing points: If the drawing or presentation board related to the criteria is good but not percent 100 correct and complete

5- Completely good: If the drawing or presentation board related to the criteria is percent 100 correct and complete.

Table 4. The first draft rubric for design Studio 1

	Design Studio 1 Evaluation Criteria	0	1	2	3	4	5
DESIGN 50%	Problem Identification						
	Research and Idea Development						
	Connecting Space-User-Function Relationship						
PRACTICE 30%	Plans						
	Sections						
	Conformity with Technical Drawing Criteria						
PRESENTATION 20%	Perspective / Render Quality						
	Model Quality						
	Presentation Order / Graphics / Language						
	Ability to Express Oneself						
	Requirements						
	Good Command of the Project						

The subtitles for each main title in Design Studio 1 evaluation criteria were determined as follows: problem identification, research and idea development and creating space-user-function relationship under *Design* title; conformity with plans, sections and technical drawing criteria under 'Application' title; and perspective-three dimensional drawing quality, model, presentation board / graphic language, expression language, requirements and good command of the project under "Presentation" title.

Mean scores were calculated by using different multipliers determined for each course. The multipliers for the criteria under main titles of each project group were calculated according to the following formula:

M=P/(NC×5) (P: Percentage, NC: Number of criteria, M: Multiplier)

There are three evaluation criteria under *Design* title of evaluation criteria for Design Studio 1 course. Accordingly, the multiplier was calculated as (50) / (3x5) =3.33. As for grading, when the points given for evaluation criteria under this title are added and multiplied with the multiplier, the result is the grade in percentages. According to this table, the scores of the student who got 3, 5, 4 from the criteria respectively are added as 3+5+4=12 and later multiplied with the multiplier 3.33; 12x3.33=39.96. Accordingly, the student gets 39.96 points out of 50 for design section. Instructors may round this value up or down. There are three criteria under the *Application* section. Since the percentage of this section is 30, the multiplier is calculated as (30)/(3X5) = 2 in the formula. There are six criteria under *Presentation* section, whose percentage is 20. The

formula calculates the multiplier; (20/(6X5) =0.66). The mean score is found by adding all the points in each section after they are multiplied with the multiplier.

MS= (g1+g2+g3)×DM+ (g4+g5gp6)×AM+(g7+g8+g9+g10+g11+g12)×PM

(MS: mean score, g: grade, DM: design multiplier, AM: application multiplier; PM: Presentation multiplier)

Semi-structured Interviews

Semi-structured interviews were conducted with the jury members. Since some jury members had a hectic schedule, the interviews were voice recorded with six members and one jury member answered the interview questions in written form. The findings obtained from the data were classified under two main titles: positive comments and suggestions.

The positive interpretations are as follows:

- Most evaluation criteria match the evaluation criteria of jury members
- The grade the jury gives according to the rubric is quite close to the grade they want to give by using their methods.
- The grades given to a student by several jury members are close to each other, with minimum differences among them.
- The rubric is user-friendly and time-saving
- A systematic evaluation criteria prevents details from going unnoticed by the jury
- It provides a background to give more detailed grades
- The rubric is systematic, objective and fair.
- *Interdisciplinary study skill* criterion is a positive approach since it should be taken into consideration in interior architecture education
- It is positive to have different criteria and multipliers for each project
- The followings are the suggestions for future applications of the proposed rubric:
- More clear universal criteria titles should be written
- 1/1, 1/2, 1/5 and 1/10 scales are not always required in *Detail* criterion. Therefore, *Details* criterion should be under one single title.
- Plans, sections and conformity with technical drawing rules should be revised since they seem to be quite interrelated
- If there is an undesired presentation board in these criteria, its multipliers should be practically changeable
- The subtitle *material* displayed under the *Application* title should be placed under another theme in a more clear way
- A users' manual should be prepared for jury members to guide them while using the rubric
- Guest jury members should not grade *Research and Idea Development* criterion if they have not witnessed project development process.
- It should be possible to give grade between the determined ranges as well
- The percentage of presentation might increase to percent 25
- *Cost sheet* might be removed from the rubric

The jury members were also asked to describe the rubric with some adjectives. They used the following adjectives to describe the rubric: rational, fair, complex, objective, effective, time-saving, comprehensive, sufficient and up-to-date.

CONCLUSION

The study aims to bring together comprehensively and systematically all the criteria used in the evaluation of interior space design, which is the final product of the design process in studio courses, In addition, it aims to contribute to interior architecture education through a rubric proposal that will ensure a transparent, fair and accountable grade for each student at the end of the semester. Therefore, rubrics are believed to be an appropriate evaluation tool for the evaluation of final products of design studio courses because of their

objectivity. A well-designed final product evaluation method positively affects students' motivation and increases their self-confidence as well their grades. It has been concluded that an instructor using rubrics evaluates students more easily and with a clear conscience. When a student objects his grade, jury members can access their evaluation details and clearly show the student his scores for each criterion. In other words, both students and instructors can easily question the evaluation process. Students might prepare themselves according to these criteria and know how their final products will be evaluated thanks to the introduction of the rubric to students at the beginning of the semester. In addition, it was found that jury evaluation can be more objective than individual evaluation.

The data that reveal the relationship between objectives-outcomes of design studio courses and final product evaluation criteria directly affect the evaluation of final products. The percentages (design percent 44, application percent 30 and presentation percent 26) obtained when the concepts in the observation were coded show that design elements of the final product outweigh and application is more important than presentation. Thus, the weight of *design* section in the rubric has been determined as percent 50, application percent 30 and presentation percent 20. Most of the jury members described the rubrics as systematic, user-friendly, less time-consuming and more detailed. Therefore, it has been concluded that this rubric saves instructors' time, makes grading easier and helps them assign fair grades. Jury members used the following adjectives to describe the rubric: rational, fair, complex, objective, effective, time-saving, comprehensive, sufficient and up-to-date. Such positive adjectives clearly imply that the rubric is effective in terms of its goals.

Table 5. The final version of Design Studio 1 Rubric[1]

	DESIGN STUDIO 1 EVALUATION CRITERIA	00	11	22	33	44	55
DESIGN 50%	Problem Identification						
	Research And Idea Development						
	Connecting Space-User-Function Relationship						
	Multiplier: 0.33						
PRACTICE 30%	Plans						
	Sections						
	Conformity With Technical Drawing Criteria						
	Multiplier: 2						
PRESENTATION 20%	Perspective / Render Quality						
	Model Quality						
	Presentation Order / Graphics / Language						
	Ability To Express Oneself						
	Requirements						
	Good Command Of The Project						
	Multiplier: 0.66						
TOTAL							

The content of this rubric (Table 5) can be extended by giving the information form to more design studio course instructors and observing different design studio courses. In addition, this rubric can be applied in different universities and its use can be evaluated by researchers and jury members. Students might be asked questions about the rubrics and their effects on design process and student motivation can be observed. Finally, technology might be used to develop a rubric system through mobile applications to make them more user-friendly.

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[1] You can see only one sample Evaluation Criteria.

REFERENCES

Aktaş, M., Alıcı, D. (2017). Examination of scoring reliability according to generalizability theory in checklist, analytic rubric and rating scales. *International Journal of Eurasia Social Sciences, 8*(29), 991-1010.

Ayyıldız Potur, A., Barkul, Ö. (2010). Stüdyo: Tasarım eğitiminin kalbi. *International Conference on New Horizons in Education,* 738-743, Famagusta.

Barrett, M. (1990). Guidelines for evaluation and assessment in art and design education 5-18 years. *International Journal of Art and Design Education, 9*(3), 299-313.

Botti-Salitsky, R. M. (2005). *Evaluation of a virtual design studio for interior design education* [Doctoral Thesis, Capella University]. https://www.proquest.com/pagepdf/305358954?accountid=25089

Casakin, H., Kreitler, S. (2008). Correspondences and divergences between teachers and students in the evaluation of design creativity in the design studio. *Environment and Planning B: Planning and Design, 35*, 666-678.

Crowther, P. (2013). Understanding the signature pedagogy of the design studio and the opportunities for its technological enhancement. *Journal of Learning Design, 6*(3), 18-28.

Çıkış, Ş., Çil, E. (2009). Problematization of assessment in the architectural design education: First year as a case study. *Procedia Social and Behavioral Sciences, 1*, 2103-2110.

Erinç, S. M. (2004). *Kültür sanat sanat kültür*. Ütopya Yayınevi.

Gül, Ö. (2016). *Türkiye'de iç mimarlık lisans eğitiminde tasarım stüdyosu derslerinin yürütülmesine yönelik geliştirme modeli önerisi* [Doctoral Thesis, Mimar Sinan Fine Arts University].

Güler, N. (2018). *Eğitimde ölçme ve değerlendirme*. Pegem Akademi Yayıncılık.

Griffin, P. (1991). Literacy assessment: Merging teaching, learning and assessment. *Annual meeting of the international reading association*. Assessment Research Centre, Las Vegas, 1-13.

Ketizmen, G. (2003). Mimari tasarım stüdyosunda çalışma yöntemleri: Anadolu Üniversitesi mimarlık bölümü örneği. *Egemimarlik*, *47*(3), 32-34.

Kılıç, R. (1996). Olgu ve değer problemi, *Ankara Üniversitesi İlahiyat Fakültesi Dergisi*, *35,* 355-402.

Kuçuradi, İ. (2016). *İnsan ve değerler.* Türkiye Felsefe Kurumu.

Kurt, S. (2009). An analytic study on the traditional studio environments and the use of the constructivist studio in the architectural design education. *Procedia Social and Behavioral Sciences, 1*(1), 401-408.

Mamur, N. (2010). Görsel sanatlar egitiminde ölçme ve değerlendirme. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, *28*(2), 175-188.

Oh, Y., Ishizaki, S., Gross, M. D., Do, E. Y.-L. (2013). A theoretical framework of design critiquing in architecture studios. *Design Studies*, 34, 302-325.

Park, J. Y. (2011). Design education online: learning delivery and evaluation. *International Journal of Art and Design Education, 30*(2), 176-187.

Popham, W. J. (1997). What's wrong and what's right with rubric. *Educational Leardership, 55*(2), 72-75.

Selik, M. (2016). *Marksist değer teorisi.* Efil Yayınevi.

Tekindal, S. (2017). *Eğitimde ölçme ve değerlendirme.* Pegem Akademi.

Shepard, L. A. (2000). The role of assessment in a learning culture. *Educational Researcher*, *29*(7), 4-14.

Smith, K., & Smith, C. (2012). Non-career teachers in the design studio: economics, pedagogy and teacher development. *International Journal of Art and Design Education*, *31*(1), 90-104.

Turgut, M. F., Baykul, Y. (2015). *Eğitimde ölçme ve değerlendirme.* Pegem Akademi Yayıncılık.

Uçak, N. Ö. (2010). Bilgi: Çok yüzlü bir kavram. *Türk Kütüphaneciliği*, *24*(4), 705-722.

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Research Article

Müze deneyiminin dijital teknolojilerle oyunlaştırılması

Gamification of museum experience through digital technologies

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Özet

Dijital teknolojilerin artan çeşitliliği, pek çok alanda olduğu gibi çağdaş müze mekânlarında da ziyaretçi deneyimini dönüştürmektedir. Yeni medya sanatı, dijitalleşme ve bilgi iletişim teknolojileri ile müzeler dijitalle gerçek mekânı bir araya getiren, çok katmanlı, deneyim odaklı mekânlar haline gelmiştir. Oyunların etkileşimli ve aktif katılım gerektiren doğası müze mekânlarında kullanıcı odaklı deneyimi artırmak bağlamında etkin yöntemler sunmaktadır. Bu çalışma ile dijital teknolojik uygulamalar desteğiyle oyunlaştırılan müze deneyiminin incelemesi amaçlanmaktadır. Araştırmada, nitel araştırma yöntemlerinden kümülatif durum çalışması yöntemi kullanılarak; saha araştırmaları, gözlem ve kaynak taramaları ile dijital teknolojilerin müze deneyimine oyunlaştırma yoluyla katkıları bütüncül olarak ortaya konmaktadır. Bu amaçla müzeciliğin dijitalleşme süreci tarihsel aşamalarıyla ele alındıktan sonra müze deneyimi ve teknoloji ilişkisi kapsamlı bir alan yazın taraması ile araştırılmış, müzede oyunlaştırma uygulamaları örneklerle incelenmiştir. Müze deneyimini oyunlaştıran uygulamaların dijital duyusal araçlar, konum tabanlı hikâye anlatımı, kitle kaynaklı veriler, sanal galeriler, erişilebilir mekânlar ve sosyal ağlar gibi dijital teknolojilerle desteklenen; bireyin aktif katılımını teşvik eden, kapsayıcı, eğlenceli, etkileşimli ve eğitici uygulamalar olduğu görülmüştür.

Anahtar Kelimeler: Müzecilik, Oyunlaştırma, Müze Deneyimi, Dijital Etkileşimli Teknolojiler, Dijital Duyusal Araçlar

Abstract

The increasing diversity of digital technologies is transforming the visitor experience in contemporary museum spaces, as in many other areas. Museums have become multi-layered, experience-oriented spaces that connect digital and physical space with new media art, digitalization, and information communication technologies. The interactive nature of games offers methods to increase the user-oriented experience in museum spaces. This study aims to examine the gamification of museum experience with the support of digital technological tools. The research holistically reveals the contributions of digital technologies to the gamification of museum experience through field research, observation, and literature review, using the cumulative case study method from qualitative research methods. For that purpose, the study discusses the digitalization process of museums with its historical stages and researches the relationship between museum experience and technology through a comprehensive literature review. Furthermore, gamification applications in museums have been examined with examples. As a result, the study concludes that inclusive, entertaining, interactive, and educational implementations encourage active participation using digital technologies such as digital sensory tools, location-based storytelling, crowd-sourced data, virtual galleries, accessible venues, and social networks gamify the museum experience.

Keywords: Museology, Gamification, Museum Experience, Digital Interactive Technologies, Digital Sensory Tools

Extended Abstract

Introduction: The gamification term was first used in the academic literature in 2010, and scientific publications have increased since then (Çetin & Erbay, 2021: 266). The concept of gamification refers to various actions performed in

environments not commonly related to gaming that is presented with game-like applications (O'Gorman & Harris, 2014: 8). The definition of "environments not commonly related to gaming" can be deduced as the purpose of using game elements is to help achieve other things (Liu & Idris, 2018: 2). Research on gamification mainly focuses on social interaction, experience, education, and motivation (Cetin & Erbay, 2021: 266 as cited in Hamari et al., 2014). It is a method they use to increase the motivation of the employees. Museums, which are educational institutions with a touristic nature, also aim to improve the museum experience and provide an engaging museum environment using the gamification method.

The concept of gamification, by its nature, defines a participatory process. Learning by playing is a practice with great potential in arts and culture teaching and is widely used in educational contexts (Bonacini & Giaccone, 2021). It is known that when users are active participants, they have memorable experiences (Pine & Gilmore, 1998: 101). The static, one-way information transfer method of traditional museology has turned into a structure that receives and shares information reciprocatively through the new museology that has developed since the 1980s. In this context, contemporary museum spaces, which aim to be transparent, participatory, and inclusive, are finding ways to gamify the museum experience through new technological opportunities. Today, museum spaces have to adapt to changing user habits and digital technologies that are widely used daily. With the integration of interactive digital technologies into museum spaces, the museum experience is transformed with playful methods that blend the physical and the virtual.

Purpose and scope: The study aims to reveal the contribution of digital technologies to the museum experience through gamification in a holistic way through examples using a comprehensive literature review and observation. The study examines current examples in the context of technology-oriented research. Thus, five examples were selected from the articles published between 2020-2022 and the museum applications that gamified the museum experience. These are examples of "hybrid gifting" as part of the GIFT project, "VRtefacts", "Twitto", "Synthaisthesia" and Berlin Global Exhibition. The selected examples are discussed in the context of the expanded visitor experience, and which methods and digital tools they use are the main questions of the research.

Method: The study uses the cumulative case study method, one of the qualitative research methods. Cumulative case studies are studies in which the researcher collects and combines information from multiple sources to generalize about a phenomenon (Epler, 2019). According to Aytaçlı (2012: 4), studies that present a retrospective or produce prospective data by collecting data from different places at different times to investigate a specific subject are also considered cumulative case studies. In this context, the gamification of the museum experience has been considered a phenomenon. Thus, the study obtained data from current examples of gamification in the museum experience. Focusing on the increasing use of fun, interactive games that encourage active participation in museum spaces, the use of digital technology-supported implementations to gamify the museum experience is explained through examples.

Findings and conclusion: Museum experience becomes dynamic and inclusive with interaction-oriented and participatory systems that change the perception of space and open new playgrounds. It is seen that with the information and communication technologies, the museum visits have turned into an expanded museum experience, the effect of which continues before and after the visit. Contemporary museums use technology as a tool to improve the experience. They aim to be fun, interactive, inclusive, democratic, and open to dialogue. It is seen that digital sensory tools contribute to the democratization of museum structures by increasing interaction and inclusiveness.

The use of digital tools in physical spaces opens new areas for visitors to guide their museum experience. In this context, the museum experience transforms and changes with gamification. Three-dimensional (3D) printing technologies allow tactile contact with artifacts, as well as immersive experiences with projection mapping and virtual reality applications. In addition, 3D visual data production and sharing in real space with augmented and mixed reality technologies are becoming widespread as catchy and entertaining alternative presentation techniques. Thus, it is seen that the experience offered by museums is transformed as much as the quality of artworks, and contemporary museum spaces operate as "entertainment centers" free from the strict rules of classical museology.

According to the results, methods that gamify the experience in museum spaces are supported by common technologies such as digital screens and headphones, as well as digital sensory tools (virtual reality, augmented reality, mixed reality, digital taste/smell interfaces) and social networks. In addition, it is seen that museums are supported in the way of becoming interactive, participatory, inclusive spaces that involve the society in the information production/transmission process by creating strong bonds through accessible venues with the use of location-based storytelling, crowdsourced data, virtual galleries, and digital sensory tools. As a result, the museum experience can be gamified, and use technological tools to support this experience by offering alternative museum experiences that make learning fun.

Keywords: Museology, Gamification, Museum Experience, Digital Interactive Technologies, Digital Sensory Tools

GİRİŞ

Yirmi birinci yüzyılda iletişim teknolojileri alanında gerçekleşen bir dizi gelişme ile sanat eserleri de yeni kimlikler kazanmıştır. Dijital etkileşimli teknolojiler sayesinde klasik sanat eserleri animasyonlarla canlandırılabilmekte ya da dokunulamayacak kadar hassas bir eser üç boyutlu baskı olarak üretilip orijinalinin yanında dokunsal bir nesne olarak kullanılabilmektedir. Tüm bu açılımlar dijital teknolojilerin artan çeşitliliği ile müzeciliği dönüştürerek, müze deneyimini oyunlaştıran, kapsayıcı, eğlenceli, etkileşimli, ziyaretçileri aktif kullanıcılar haline getiren müze uygulamalarına imkân vermektedir.

Oyunlaştırma terimi ilk kez 2010 yılında akademik literatürde kullanılmaya başlanmış ve o zamandan bu yana bilimsel yayınlar artmıştır (Çetin & Erbay, 2021: 266). Son yıllarda sıkça karşılaşılan oyunlaştırma (gamification) kavramı, gerçekte oyunla ilgisi olmayan ortamlarda gerçekleştirilen çeşitli eylemlerin oyuna benzer uygulamalarla sunulması anlamına gelmektedir (O'Gorman & Harris, 2014: 8). *Gerçekte oyunla ilgisi olmayan* ortamlar tanımından, oyun öğelerini kullanma amacının, başka şeylerin başarılmasına yardımcı olmak anlamına geldiği çıkarımı yapılabilir (Liu & Idris, 2018: 2). Oyunlaştırma üzerine yapılan araştırmalar temel olarak sosyal etkileşim, deneyim, eğitim ve motivasyona odaklanmaktadır (Hamari vd., 2014'ten aktaran Çetin & Erbay, 2021: 266). Oyunlaştırma, eğitimcilerin dersi daha eğlenceli ve ilgi çekici hale getirmek, markaların ürün satışını artırmak ya da işverenlerin çalışanlarının motivasyonunu artırmak adına kullandıkları bir yöntemdir. Turistik niteliğe sahip eğitici kurumlar olan müzeler de oyunlaştırma yöntemini kullanarak müze deneyimini geliştirmek ve ilgi çekici bir müze ortamı sunmayı amaçlamaktadır.

Kültür endüstrisi içerisinde müze hegemonyasının sürdürülebilirliği için güncel bilginin aktarımında internet teknolojisinin hızına yetişmesi mümkün olamayacağından, mekânsal deneyimlerin desteklenmesi gerekmektedir. Bu durum, kente değer katan bir müze mimarisinin yanı sıra iç mekânda alternatif sunum tekniklerini ön plana çıkarmaktadır. Müze mekânları, etkileşimli, sürükleyici deneyimler için farklı sergileme tiplerine hizmet verecek geniş ölçekli alanlara ihtiyaç duymaktadır. Kapsayıcı ve etkileşimli mekânlar müzede yeni algılama ve öğrenme yollarına imkân tanımaktadır (Kocsis & Kenderdine, 2014: 245). Günümüzde fiziksel mekânların ve objelerin sınırlı doğası dijital teknolojilerle aşılabilmektedir. Böylece alışılmışın dışında yeni deneyimler sunmaları, gerçek mekânla sanalı harmanlamaları ve tıpkı oyunlarda olduğu gibi çeşitli dijital duyusal araçlar desteğiyle kullanılmaları müze deneyimini oyunlaştırmaktadır.

Oyunlaştırma kavramı doğası gereği katılımcı bir süreci tanımlamaktadır. Oynayarak öğrenme, sanat ve kültür öğretimi alanında büyük potansiyeli olan ve eğitsel bağlamlarda yaygın olarak kullanılan bir uygulamadır (Bonacini & Giaccone, 2021). Bireyin aktif katılımcı olduğu durumlarda akılda kalıcı deneyimler yaşadığı bilinmektedir (Pine & Gilmore, 1998: 101). Geleneksel müzeciliğin *sıkıcı* addedilen durağan, tek yönlü bilgi aktarımı yapan yapısı 1980'lerden itibaren gelişim gösteren yeni müzecilik kavramı ile bilgiyi katılımcı yöntemlerle çok yönlü alan ve paylaşan bir yapıya dönüşmüştür. Bu bağlamda, şeffaf, katılımcı, kapsayıcı mekânlar olma hedefi taşıyan çağdaş müze mekânları yeni teknolojik imkânlardan da faydalanarak müze deneyimini oyunlaştırma yolunda çalışmalar yapmaktadır. Artık günlük yaşamda yaygın olarak kullanılan dijital teknolojiler beraberinde değişen kullanıcı alışkanlıklarına müze mekânları da uyum sağlamak durumundadır. Etkileşimli dijital teknolojilerin müze mekânlarına entegrasyonu ile müze deneyimi fiziksel olanla sanalı harmanlayan oyuncu yöntemlerle dönüşmektedir. Araştırmanın sonraki bölümlerinde, dijital çağda müzeyi anlamak ve kullanıcı deneyimini derinlemesine sorgulamak amacıyla müzeciliğin dijitalleşme süreci tarihsel aşamalarıyla ele alınmaktadır. Müze deneyiminin oyunlaştırılması kapsamlı bir alan yazın taraması ile bir fenomen olarak irdelenmektedir.

Müzeciliğin Dijitalleşme Süreci

Parry'ye göre (2013: 24) müzelerde dijital teknolojilerin kullanımı, son on yılda yaşanan dijital teknolojik gelişmelerden sonra normatif hale gelmiştir. Etkileşimli teknolojiler 1920'li yıllarda Avrupa'daki bilim müzeleri ile müzelerde kullanılmaya başlanmıştır. Katılımcı öğrenme süreci somut nesnelerle oluşturulmuştur. 1933'te, nesnelerle etkileşim yoluyla bilgi aktarma yöntemi, Amerika Birleşik Devletleri'ndeki bilim müzelerine kadar genişletilmiştir (Bedno ve Bedno, 1999: 41).

Müzelerde dijitalleşmenin tarihi ise 1960'lara dayanmaktadır. 1967 yılı müzeciliğin dijitalleşmesi yönünde ilk adımların Washington'da Smithsonian Institution'da atıldığı yıldır (Parry, 2007). 60'lar Amerikasının kültürel

ve ekolojik uyanışı ile müzelere olan toplumsal ilgi artmıştır. Bununla birlikte, televizyonun varlığı, bilgisayarın icadı ve toplumsal yaşama etkisiyle kullanıcıların müzelerden beklentileri değişime uğramıştır. Artık toplum müzelerden düzenli kayıt altına alınan koleksiyonlar ve düzenli bir şekilde yenilenen sergi ortamı beklemektedir (Williams, 1987: 16). O tarihte müzelerin bilgisayar erişimine sahip olması oldukça maliyetli ve ancak büyük müzeler tarafından karşılanabilecek bir durum olarak görülmekteydi. "Mainframe" adı verilen ilk bilgisayarlar için müzeler özel odalar yapıp, bu karmaşık sistemi kullanmaya çalışıyorlardı. Birkaç büyük çaplı müze bilgisayar sistemini bünyesine katabilmişti. Smithsonian Institution tarafından üretilen SELGEM (SELf GEnerating Master) koleksiyon yönetimi için kullanılmış ve 1970'lerden itibaren diğer kurumlar için ücretsiz kullanıma sunulmuştur (Williams, 1987: 17). Williams'ın (1987) müzelerin dijitalleşme tarihi üzerine yazdıkları müzeciliğin bilgi işlem ile ilişkisinin ne kadar gerilere dayandığının ve hem koleksiyon kaydı hem de toplumsal gelişmeler karşısında müzelerin reaksiyon verme yönteminin yine teknolojiden geçtiğinin önemli bir kanıtıdır. Bu bağlamda müzeciliğin dijitalleşme ile bağının başlangıçta koleksiyon kayıtları odağında başladığını söylemek yerindedir.

1980'lerde *yeni müzecilik* söyleminin ortaya çıkmasından sonra, müzeler giderek toplumsal değişime işaret eden ama aynı zamanda katkıda bulunan kurumlar olarak görülmeye başlamıştır (Vergo, 1989: 3). 1990'lara gelindiğinde ise yeni medya sanatının etkisiyle yeni müzecilik anlayışı ve yeni teknolojiler üzerine eleştirel yaklaşımlar sunulmaya başlanmıştır (Parry, 2010: 1). Dijital sanat eserlerinin ortaya çıkışı ile bilgisayar destekli ürünlerin müzeye girmeye başlaması, müzelerin sergileme şekillerini de etkilemiştir. Kalıcı koleksiyon ağırlıklı sergilerden, dönemsel sergi ağırlıklı programlara geçiş başlamıştır. Kültür endüstrisi yeni teknolojilerden ve dijitalden beslenerek dönüşmeye devam etmiştir.

Dijitalleşme, müzeler için bir paradigma kayması yaratmıştır. Müzeler, varlıklarını korumak için bu teknolojik ve toplumsal değişikliklere uyum sağlamak zorunda kalmıştır (Tallon, 2019). Bir dönem, içerisinde fotoğraf çekmenin yasaklandığı müzeler, artık çeşitli uygulamalarla akıllı telefon ve sosyal medya kullanımını teşvik eden mekânlara dönüşmüştür. Tarihsel olarak kütüphaneler, arşivler ve galerilerle birlikte bilgiye erişimin kurumsal mekânları olan müzeler bilgi teknolojilerindeki gelişmelerin etkisiyle koleksiyon odaklı mekânlardan ziyaretçi/kullanıcı merkezli modele geçiş yapmıştır (Giannini & Bowen, 2019: 28). Yeni müzeler topluma nasıl en iyi şekilde hizmet edeceklerini düşünmektedirler. Artık toplum için değil, *toplumla birlikte* çalışmaktadırlar. Dijital çağın dünyanın herhangi bir yerinden anında iletişimi kolaylaştıran teknolojilerle donanmış katılımcı kültürü, kullanıcı tarafından oluşturulan içerikler, kitle küratörlüğünde sergiler, kişiselleştirilmiş çevrimiçi koleksiyonlar ve sosyal medya dâhil olmak üzere yeni müze deneyimlerine ilham vermesi anlamına gelmektedir (Bautista, 2013: 28).

Artırılmış gerçeklik (AR), çoklu dokunmatik yüzeyler ve sanal gerçeklik (VR) gibi yüksek teknolojili etkileşimli sistemler, son yıllarda birçok sanat müzesinde giderek artan bir şekilde kullanılmaktadır. Kullanıcı deneyimini artıran bu dijital yöntemler ile müzelerin sergileme biçimleri de değişime uğramaktadır. Dijital ortamda sergilenen müze arşivleri, sanal müze gezileri ve sergilerin yanı sıra, gerçek mekânda müzeyi deneyimlemenin farkını ortaya koymak önemli hale gelmiştir. Müze mimarisi ve iç mekânları da bu bağlamda esnek, geçirgen ve kapsayıcı bir kimlik kazanmaktadır. Küratörlü mekânlar olarak müzeler, genellikle çeşitli şekillerde seçilen nesneler veya temalar hakkında bilgi ve deneyim sunmaktadır. Dijital araçlar, bu ortamı sağlamanın yeni yollarını mümkün kılmaktadır. Dijital medya, koleksiyonlara bakmak ve anlamak için yeni yollar ürettiği kadar, önceki temsil tekniklerini de yeniden sunmakta ve dönüştürmektedir. Bu teknolojilerin her biri dış dünyayı müzeye taşımayı iddia etmektedir. Tıpkı eski sergileme biçimlerinde olduğu gibi dünyada bulunmanın ve onu öğrenmenin yeni yollarını üretmektedir (Geismar, 2018: 17). Bu bağlamda müzede yaşanan deneyimin önemi ön plana çıkmaktadır.

Müze Deneyimi ve Teknoloji İlişkisi

Yeni medya sanatı, dijitalleşme ve bilgi teknolojileri ile müzecilik çok katmanlı ve deneyim odaklı mekânlar olma yoluna girmiştir. Dijitalleşme, beraberinde etkileşimi getirmiş, etkileşim de deneyim kavramının ön plana çıkmasını sağlamıştır. Kültür endüstrisi deneyim kavramı ile doğrudan bir ilişki içindedir. Deneyim; Merriam Webster Dictionary'de (2021) "doğrudan gözlem veya katılım yoluyla bilgiden etkilenme veya bilgi edinme durumu" olarak tanımlanmıştır. Bireyin çevresindekileri duyular, algı ve kavrama yoluyla anlamlandırmasıdır

(Tuan, 1977: 8). Hem zihinsel hem de bedensel bir eylemdir. Pallasmaa'ya göre (2011), duyular zihinde bilgiyi oluşturduğu gibi imgelemi tetikleyerek yeni sanatsal fikirlerin oluşumunu da sağlamaktadır.

Müze deneyimi çoğunlukla estetik deneyimle ilişkilendirilmektedir. Yirmi birinci yüzyıl müzeciliğini eğitim teorisi ve uygulamaları alanında önemli ölçüde etkileyen John Dewey, 1934 tarihli *Art as Experience* adlı kitabında, sanatsal ve estetik deneyime yönelik kapsamlı teoriler sunmaktadır (Bedford, 2014: 81). Dewey "estetik deneyim" tanımı yerine "deneyim" (an experience) tanımını kullanmaktadır. Ona göre bir eylemin deneyim olarak adlandırılması için eğitici olması ve kişinin eylemin uygulanmasında aktif katılımcı olması gerekmektedir (Glass, 1997: 93). Bu bağlamda, deneyim kavramının kültür endüstrisini etkileyen temel kavramlardan biri haline gelmesi tesadüf değildir. Literatürde deneyim ekonomisi kavramı Pine ve Gilmore'un (1998) Welcome to the Experience Economy adlı makalesinde eğlence sektörü ve yeni teknolojilerle ilişkisi üzerinden açıklanmaktadır:

> *Deneyimler her zaman eğlence sektörünün merkezinde yer almıştır(...) Ancak günümüzde bir eğlence deneyimi satma kavramı tiyatrolardan ve eğlence parklarından çok uzaktaki işletmelerde kök salmaktadır. Özellikle yeni teknolojiler, etkileşimli oyunlar, İnternet sohbet odaları ve çok oyunculu oyunlar, hareket tabanlı simülatörler ve sanal gerçeklik gibi yepyeni deneyim türlerini teşvik etmektedir. Her zamankinden daha sürükleyici deneyimler sunmak için gereken artan işlem gücü, artık bilgisayar endüstrisinin mal ve hizmetlerine olan talebi artırmaktadır.* (Pine & Gilmore, 1998: 99)

Müzeler birer *deneyim mekânı* olarak tanımlandığı dönemden önce de ziyaretçilerine farklı deneyimler sunan mekânlardı. Ancak felsefe profesörü Hilde Hein'a göre (2006: 3), yirminci yüzyılın ortalarında koleksiyonların yerini geçici sergilerle birlikte deneyimlerin almasıyla *deneyim müzesi* kavramı ortaya çıkmıştır. 1960'lara kadar müze ziyaretçilerine anketler yapılması yaygın bir uygulama değilken, 1960 ve 70'lerde toplumun isteklerini öğrenmek amaçlanmıştır (Hein, 2006: 5). Ziyaretçilerin beklentilerini göz önüne almaya başlayan müze, eğitici, bilgi aktarıcı rolünden, karşılıklı etkileşim, bilgi paylaşımı ve deneyim temelli modele yönelmiştir. Deneyim temelli bu model, dijitalleşme ile desteklenerek gelişimini sürdürmektedir.

Müze ziyaretçi çalışmaları hakkında kapsamlı bir literatür bulunmaktadır (Black & Hein, 2003; Falk & Dierking, 1992, 2000, 2012; Hooper-Greenhill, 1999; Black, 2012). Bu araştırmalar müze deneyiminin herkes için standart olmadığını, çoğu zaman kişisel bir deneyim olarak gerçekleştiğini öne sürmektedir (Chang, 2006: 170). Bununla beraber Walker (2008: 110), müze kullanıcılarına "ziyaretçi" denmesinin eylemin tanımı gereği "pasif" bir anlam taşıdığını savunmaktadır. Buna karşılık günümüzde birçok müzenin "yapılandırmacı" bir görüşü kabul ettiğini ve bilginin aktif olarak öğrenen tarafından üretildiğini öne sürmektedir. Dijital çağ, katılımcı kültürü doğurmuştur (Bautista, 2013: 7). Müzeler artık bireyin ne öğrendiğine değil, müzenin mevcut bilgilerine ne katkıda bulunduğuna odaklanmaktadır. Böylece anlamlı ve doyurucu bir müze deneyiminin önemi ortaya çıkmaktadır.

Müze, kullanıcısını gerçek mekânda sergilenen nesnelerle yalnızca görsellik odağında değil, dijital uygulamalarla tüm duyuları stimüle ederek, etkileşime sokmaktadır. Müzeler ziyaretçilerinden eşzamanlı olarak elde ettiği verileri analiz ederek müze deneyimini artırmayı hedefleyen uygulamalar sunmaktadır. Bu bağlamda, gerçek mekânla teknoloji destekli uygulamaları harmanlayan kurumlara dönüşmüşlerdir. Morrison'a göre (2021), teknoloji destekli çağdaş müze dijital öğelerle gerçek mekânı birleştiren *hibrit* müzedir. Gerçek mekânla dijitali harmanlayan müzede deneyim yalnızca müze mekânında yaşanmamaktadır. Bu bağlamda Morrison, müze deneyimini genişletilmiş ziyaretçi deneyimi olarak tanımlamaktadır (Görsel 1).

Görsel 1. Genişletilmiş ziyaretçi deneyimi parametreleri

Genişletilmiş ziyaretçi deneyimini gerçekleştiren parametreler; *etkileşim, katılım, iletişim, dâhil olma* ve *kapsayıcılık* başlıkları altında sınıflandırılmaktadır. Bu parametreleri destekleyen teknolojik uygulamalar ise; *dijital duyusal araçlar* (digital sensory tools), *konum tabanlı hikâye anlatımı* (location-based story telling), *kitle kaynaklı veriler* (crowd-sourced data), *sanal galeriler, erişilebilir mekânlar* ve *sosyal ağlar* olarak tanımlanmaktadır. Çağdaş müze mekânlarında tüm bu özellikleri destekleyen, oyuncu, etkileşimli, kapsayıcı uygulamalarla teknoloji destekli bir müze deneyimi sunulmaktadır.

Dijital duyusal araçlar, hem halihazırda yaygın olan cihazları (kulaklıklar, hoparlörler ve dokunmatik ekranlar gibi) hem de sanal gerçeklik, artırılmış gerçeklik, karma gerçeklik, dijital tat/koku arayüzleri gibi bu bağlamda henüz tamamen ticarileştirilmemiş bir dizi başka yeni teknolojiyi tanımlamaktadır (Petit vd., 2019: 43). Müze ziyaretçilerinin baskın olarak görme duyusu ve sesle ilişkilenen alışıldık müze deneyimleri dijital duyusal araçlar yoluyla harekete geçirilen farklı duyularla desteklenebilmektedir. Bu yolla sanat eseri ve müze mekânı ile etkileşim dönüşmektedir.

Artık birçok müze, web siteleri, bloglar, Facebook, Twitter, Instagram gibi sosyal ağlar aracılığıyla toplumla iletişim kurmaktadır. Geleneksel olarak profesyonel verilere odaklanan müze koleksiyonları, artık paydaşlarından biri olan kullanıcı verilerini yani kitle kaynaklı verileri önemseyerek, müzeciliğe yeni bakış açıları kazandıran yorumları değerlendirmektedir (Chae vd., 2016: 886). Katılımcı, kullanıcı odaklı, şeffaf müzecilik bu yolla desteklenmektedir.

İnternet kullanımının yaygınlaşması ve yeni müzeciliğin şeffaflık ilkesi ile sanat eserlerine erişiminin müze mekânı ile sınırlı kalma durumu son bulmuştur. Pek çok müze koleksiyonlarını ve müze mekânlarını sanal olarak gezme imkânı sunmaktadır. Bununla birlikte, Google'ın kâr amacı gütmeyen platformu Arts & Culture ile ziyaretçilerin müze galerisinde yapamayacağı şekillerde, eserlere daha yakından bakma imkânı sağlayan sanal galeriler sunmaktadır. Müzeler bu yolla sanal sergiler düzenleyerek koleksiyonlarına dünyanın her yerinden çevrimiçi erişim imkânı vermektedir. Örneğin Los Angeles'taki J. Paul Getty Müzesi 2021 yılına kadar 22 adet çevrimiçi sergi yayınlamıştır (Morrison, 2021). Sergiler müzenin resmi internet sitesi üzerinden açık erişimle gezilebilmektedir. Bu yöntem aynı zamanda fiziksel müze mekânlarının evrensel tasarım ilkelerince tasarlanması gerekliliğinin yanı sıra, çevrimiçi erişimle de kolayca erişilebilir mekânlar haline gelmesine imkân vermektedir.

Son olarak, müzelerde konuma dayalı hikâye anlatımı kullanımı ziyaretçilere etkin bir müze deneyimi sunarak *dâhil olma* imkânı vermektedir. Özellikle koleksiyon odaklı müzeler, açık hava müzeleri ya da bir hikâyeye dayalı genel sergi mekânlarında kullanılan yöntem, ilgi çekici multimedya hikâyeler oluşturmak ve anlatmak için aktif, bilgilendirici bir rehber şeklinde çalışmaktadır. Genellikle müzelerin kurumsal dijital uygulamaları üzerinden ziyaretçilerin akıllı telefonları ya da tabletlerine indirilmesi ile ya da müze tarafından temin edilen dijital tabletler yoluyla kullanılabilmektedir. Müzelerde genişletilmiş ziyaretçi deneyimi olarak tanımlanan bu yöntemler, oyunlaştırmanın "gerçekte oyunla ilgisi olmayan ortamlarda gerçekleştirilen çeşitli eylemlerin oyuna benzer uygulamalarla sunulması" mantığını desteklemektedir.

YÖNTEM

Araştırmada nitel araştırma yöntemlerinden kümülatif (birikimli) durum çalışması yöntemi kullanılmıştır. Kümülatif durum çalışmaları; araştırmacının, bir fenomen hakkında genelleme yapabilmek için çok sayıda veri kaynağından bilgi topladığı ve bir araya getirdiği çalışmalardır (Epler, 2019). Aytaçlı'ya göre (2012: 4), spesifik bir konuyu araştırmak amacıyla farklı zamanlarda farklı mekânlardan veri toplayarak bir retrospektif sunan ya da ileriye yönelik veri üreten çalışmalar da kümülatif durum çalışmaları olarak değerlendirilmektedir. Bu bağlamda çalışmada müze deneyiminin oyunlaştırılması bir fenomen olarak ele alınmış, müze deneyimini oyunlaştıran güncel örnekler üzerinden veri elde edilmesi yoluna gidilmiştir. Aktif katılımı teşvik eden, eğlenceli, etkileşimli oyunların müze mekânlarında artan kullanımına odaklanarak, dijital teknoloji destekli uygulamaların müze deneyimini oyunlaştırma yönünde kullanımları bir sonraki bölümde örnekler üzerinden açıklanmıştır. Kapsamlı bir literatür taraması ve gözlem ile incelenen örnekler ile dijital teknolojilerin müze deneyimine oyunlaştırma yoluyla katkıları bütüncül olarak ortaya konması amaçlanmıştır.

BULGULAR

Teknoloji odaklı bir araştırma olması bağlamında güncel örnekler üzerinden inceleme yapılması amaçlandığından, bu bölümde 2020-2022 tarihleri arasında yayınlanan makaleler ve müze deneyimini oyunlaştıran müzecilik uygulamaları içerisinden beş örnek seçilmiştir. Bunlar; GIFT Projesi kapsamında "hibrit hediye", "VRtefacts", "Twitto", "Synthaisthesia" ve "Berlin Global Sergisi" örnekleridir.

Müzelerde Oyunlaştırma ile Yeni Deneyimler

Müzelerde oyunlaştırma süreci yeni bir kavram olmamasına karşın bilgi teknolojilerinin ortaya çıkmasıyla birlikte, oyunlaştırma sadece müzelerde daha yaygın hale gelmekle kalmamış, aynı zamanda daha sürükleyici ve dikkat çekici hale gelmiştir (Wang & Baptista Nunes, 2020: 310). Sanal gerçeklik, artırılmış gerçeklik, karma gerçeklik uygulamaları gibi sarmal, kapsayıcı mekân deneyimlerinin yanı sıra, projeksiyon haritalama, kare kod (QR) uygulamaları, sensörler, yapay zekâ (AI) destekli veri toplama araçları gibi destekleyici sistemler de müzelerde kullanılan çeşitli dijital teknolojik uygulamalardır. Dijital inovasyonlar yeni temsil biçimlerine olanak sağlamaktadır.

The European Commission'ın 2018'de yayınlanan raporu Innovation&Cultural Heritage'da dijital yöntemlerin kullanımının müze deneyimini artırmak, ziyaretçileri kültürel mirasla aktif etkileşime geçirmek adına etkili yöntemler sunduğundan söz edilmektedir (European Commission, 2018: 8). Müze deneyimi eğlenceli, etkileşimli, oyuncu bir hale getirilmektedir. Raporda bunlara örnek olarak, ziyaretçilerin müze sergi "playlist"lerini mobil dijital bir uygulama yoluyla arkadaşları ile paylaşabildikleri GIFT Projesi gösterilmektedir. GIFT (armağan), Avrupa Birliği'nin Horizon 2020 araştırma ve yenilik programı kapsamında müzelerin fiziksel ve dijitali birleştiren hibrit deneyimler yaratmasına yardımcı olmak amacıyla müze profesyonellerini, dünyaca ünlü sanatçıları, tasarımcıları ve akademisyenleri bir araya getirerek finanse ettiği bir projedir. Proje kapsamında desteklenen araştırmacılar tarafından 2017 yılından bu yana onlarca yayın yapılmıştır. Projenin temel zorluğu, anlamlı deneyimleri kolaylaştıran tasarımlar yaratmak ve müzelerin ziyaretçilere kendi hikâyelerini anlatmaları için nasıl araçlar sağlayabileceğini göstermektedir. GIFT, fiziksel ziyaretleri dijital içerikle tamamlayan veya üst üste bindiren karma gerçeklik tasarımlarıyla gerçekleştirilen hibrit deneyimlere odaklanmaktadır (Back vd., 2018: 31). Müzelerde bu tür oyun ve oyunlaştırma uygulamalarının kullanımı gittikçe artmaktadır (Beale, 2011).

GIFT Projesi kapsamında yapılan çalışmalardan birinde Koleva vd. (2020), dört farklı vaka çalışması ile müzede "hibrit hediye" uygulamasını önermektedir. Vaka çalışmalarının ilki, ziyaretçilerin arkadaşlarına kişiselleştirilmiş dijital içerik hediye etmelerini sağlayan ve artırılmış gerçeklik teknolojisi ile çalışan bir tür geri sayım takvimidir. İkincisi, kişiselleştirilmiş müze turları hediye etmeye imkân tanıyan bir müze hediye uygulamasıdır. Bir diğeri ise ziyaretçileri karşılıklı olarak kişisel müzik çalma listeleri oluşturarak paylaşımlı olarak dinleyebildikleri bir kent turuna çıktıkları yerel bir medya deneyimi sunmaktadır. Son vaka çalışması ise dijital müzik parçalarını bir yiyeceğe sararak "yenilebilir müzik parçaları" haline getiren ve farklı duyuları da devreye sokan bir deneyim önerisidir. Çalışma, hediye verme yoluyla fiziksel ve dijital katmanları içeren hibrit hediye konseptini kullanarak özgün deneyimler sunmaktadır.

Sanal gerçeklik ve üç boyutlu (3D) baskı teknolojisini birleştiren bir başka uygulama ise 2019 yılında İngiltere'deki Derby Müzesi ve Sanat Galerisi'nde uygulanan VRtefacts'tir (Spence vd., 2020). Bir sanal gerçeklik ile hikâye anlatım deneyimi olan VRtefacts ile ziyaretçiler, 3D olarak taranmış ve VR ortamına aktarılmış bir nesnenin fiziksel bir 3D baskısına dokunurken eş zamanlı olarak VR gözlükleri vasıtasıyla inceleyebilmektedir (Görsel 2). Deneyimin sonunda dilerlerse bu etkileşimin kendilerine anımsattığı kişisel bir *hikâyeyi* paylaşabilmektedirler. Bu sayede geleneksel olarak sabit konumlarında ve yalnızca görme duyusuyla deneyimleyebildiğimiz eserleri farklı açılardan, dokunarak ve sanal ortamda sarmal olarak deneyimlemek mümkün hale gelmektedir. Ayrıca bu deneyim, dijital duyusal araçlar aracılığıyla uygulamayı kullananların geribildirimlerini alarak söz sahibi olmalarına imkân vermesi yönünden etkileşim, katılım, dâhil olma, kapsayıcılık ve iletişim gibi parametrelere de cevap vermektedir.
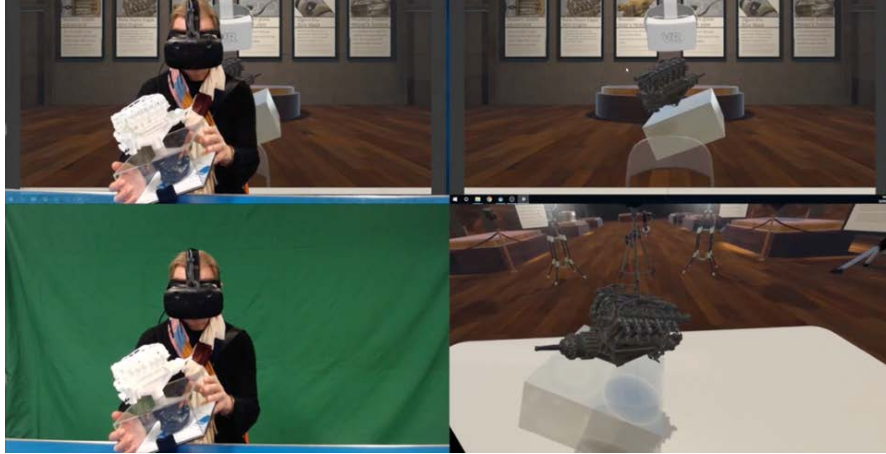
Görsel 2. VRtefacts uygulama sürecine ait karma görüntü (sol üst), sanal kamera görüntüsü (sağ üst), gerçek kamera görüntüsü (sol alt) ve sanal gerçeklik gözlüğünden görüntü (sağ alt)

Ancak oyunların bir müze ortamına dâhil edilmesi kendi zorluklarını da beraberinde getirmektedir (Løvlie vd., 2021). Løvlie vd. (2021), müze ortamında oyunların dikkat dağıtıcı doğasına işaret etmektedir. Bunun yerine, "eleştirel oyun" kavramını "normlara ve uzlaşımlara kasıtlı olarak meydan okunan bir oyun biçimi" olarak tanımlamaktadırlar. Bu amaçla, çalışmalarında Yugoslavya Müzesi için Twitto adında tek oyunculu bir rol yapma oyunu (Role Playing Game- RPG) prototipi tasarlamışlardır. Oyun, eski başkan ve diktatör Tito'ya ait eserlerin yanında bir tür QR kod mantığı ile çalışan ve "Artcode" adı verilen taranabilir çıkartmalardan oluşmaktadır. Ziyaretçiler Tito'ya ait eşyalara eklenmiş çıkartmaları tarayarak, dönem hakkında bilgiler, görevler ve çeşitli sorular aldıkları bir oyuna dâhil olmaktadır. Oyunda ziyaretçiler kendilerini otokratik bir diktatörün yerine koyarak, eğlenceli bir kurguyla dönem hakkında bilgi edinmeye davet edilmektedir. Yugoslavya Müzesi'nin tarihi sergisini keşfederken Twitto dijital uygulaması aracılığıyla kendi manifestolarını, posterlerini, otobiyografilerini ve diğer propaganda öğelerini tasarlamaya davet edilmektedir. Uygulama, bir Artcode tarandığında Tito'nun hayatından bir bölüm sunan bir dizi ekran açmakta ve oyuncudan kendi propaganda öğelerini yaratmasını istemektedir (Görsel 3). Böylece artık ziyaretçiler birer oyuncu haline gelerek bir dizi yaratıcı mücadeleye girmektedir. Uygulama dijital duyusal araçların kullanımı ile müzedeki fiziksel eserlere yönelik dikkat dağıtmadan deneyimi artırmak bağlamında etkin bir örnektir.
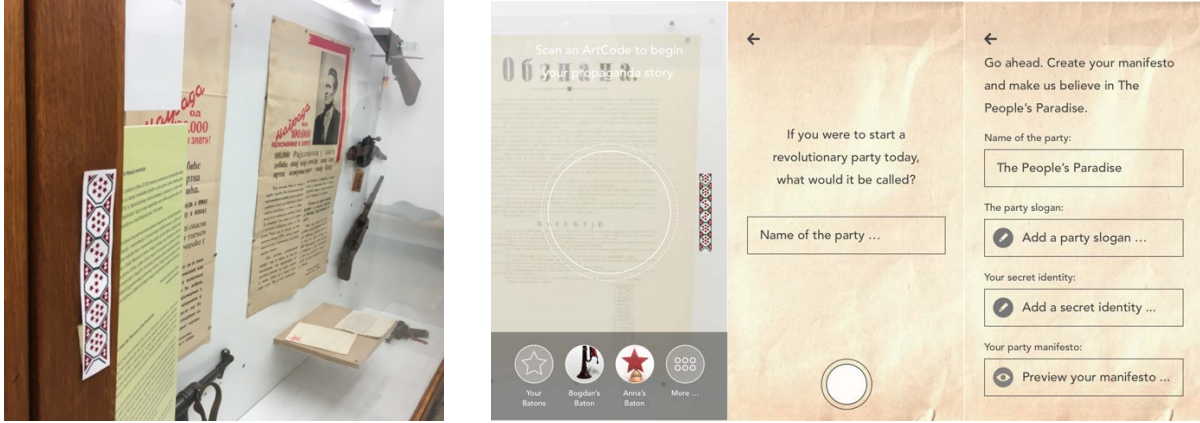
Görsel 3. Yugoslavya Müzesi'nde bir Artcode uygulaması (sol) ve Twitto uygulaması ekran görüntüleri (sağ)

Müzelerin kapsayıcı olma süreci zorlu olmakla birlikte, toplumsal çeşitliliğe yanıt verme çabaları dikkat çekicidir. Dijital teknolojiler müzelerin bu bağlamda süregelen gelişimlerinde kullandıkları önemli araçlardır (Bautista, 2013). Dijital teknolojilerin müzede kapsayıcılığı artırmaya yönelik kullanımına örnek olarak Smithsonian Institude Müzesi'nde 2021 yılında uygulanan Synthaisthesia Projesi gösterilebilir. Smithsonian Institude, artırılmış gerçeklik teknolojisi kullanarak gözleri görmeyen ziyaretçilere sanat eserlerini detaylı olarak tarif eden sesli bir açık kaynaklı yardımcı teknoloji paketi olan ve Ian McDermott tarafından geliştirilen Synthaisthesia'yı kullanmaktadır (Morrison, 2021). Synthaisthesia, görme engelli veya az gören ziyaretçilerin müzelerdeki görselleri daha iyi anlayabilmeleri için sanatın görsel deneyimine paralel bir işitsel deneyim yaratmaktadır. Alışık olduğumuz klasik sesli rehberlerden farklı olarak, ziyaretçinin elle kavranan özel bir cihazla aktive olan bir fare imleci ile katmanlarına ayrılmış ve bölgesel olarak farklı ses dosyaları çalabilen dijital görsel üzerinde hareket etmesine olanak vermektedir. Böylece kullanıcı esere ait detaylı bilgiyi kontrol kendisinde olacak şekilde ve betimleyici olarak alabilmektedir (Görsel 4). Bu da dezavantajlı bireylere yeni bir müze deneyimi sunarak katılımcı olmalarına imkân vermektedir. Sesli açıklamalar kullanıcıya görüntü ayrıntılarının gerçek anlamını vermek için sözel olabilmekle beraber, yalnızca sözcüklerle aktarılamayacak öğelerin duygusunu verebilmek için tonal/müzikal olabilmektedir. Her açıklama, kullanıcının tercihine göre seçilebilir olarak tasarlanmıştır (McDermott, 2021). Proje dijital duyusal araçları kullanarak müze mekânlarında oyuncu, kapsayıcı, sürdürülebilir ve sosyal olarak adil bir ortam sağlaması yönünden etkin bir yöntem sunmaktadır.
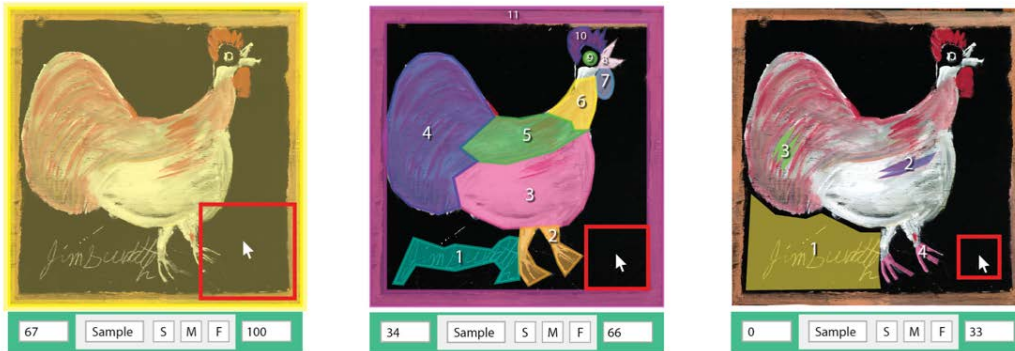
Görsel 4. Jim Sudduth'ın "Untitled (Chicken)" adlı tablosu üzerinde Synthaisthesia'nın kullanımı

Giyilebilir teknolojiler yoluyla kitle kaynaklı veri toplayarak müze deneyimini dönüştürmek ve ziyaretçilerin aktif deneyimler yaşamalarını sağlamak mümkündür. Örnek olarak, 2021 yılında kalıcı bir sergi olarak açılan ve günümüzde hala sergilenmeye devam eden Berlin'deki Humboldt Forum'da Berlin'i ve tarihçesini anlatan Berlin Global Sergisi gösterilebilir. Berlin Global Sergisi'nde sergi boyunca takmaları için verilen dijital bileklik ile ziyaretçilerden eş zamanlı veri toplanabilmektedir (Görsel 5). Bu veriler ziyaretçilerin etkileşimli sergi boyunca yaptığı yönlenme ve seçimleri üzerinden elde edilmektedir. Sergi sonunda serginin konusuyla da bağlantılı olarak, "Senin için eşitliğin/özgürlüğün/geleneğin/güvende olmanın anlamı ne?" sorusuna cevap

veren bir "iletişim bileti" geribildirim olarak verilmektedir (Görsel 5). Böylece hem sergide yapılan seçimlerin etkileşimli doğasından faydalanan hem de müze deneyiminin sergi sonrasında da akılda kalıcı hale gelmesine imkân veren ilgi çekici bir yöntem sunulmaktadır. Bunun yanı sıra, müzede süreci deneyimlemek için verilen sesli bilgilendirmeler çoklu dil paketi içerisinden (Arapça, Çince, İngilizce, Fransızca, Almanca, Alman İşaret Dili, İtalyanca, Japonca, Lehçe, Rusça, İspanyolca ve Türkçe) kullanıcının seçtiği dilde sunulmaktadır. Bu durum da Berlin gibi kozmopolit bir kenti anlatan müzenin farklı kültürlere yönelik kapsayıcılığına vurgu yapmaktadır.

Görsel 5. Humboldt Forum'daki Berlin Global sergisinde kullanılan dijital bileklik ve başlangıç ekranı (solda), ve sergi sonunda verilen "iletişim bileti" (sağda)

İncelenen örneklerden elde edilen bulgular, genişletilmiş ziyaretçi deneyimi parametreleri üzerinden analiz edilerek Tablo 1'de gösterilmiştir.

Tablo 1. Örnek oyunlaştırma uygulamalarının genişletilmiş ziyaretçi deneyimi parametreleri üzerinden incelenmesi

Genişletilmiş ziyaretçi deneyimi parametreleri	Hibrit hediye	VRtefacts	Twitto	Synthaisthesia	Berlin Global
Etkileşim *Dijital duyusal araçlar*	Karma gerçeklik, artırılmış gerçeklik gibi dijital duyusal araçlar kullanılarak müze deneyimini oyunlaştırmaktadır.	Sanal gerçeklik gözlükleri aracılığıyla sanat eserleriyle etkileşimi artırmaktadır.	Artcode'lar ve Twitto uygulaması aracılığıyla oyuncu, etkileşimli bir sergi içeriği sunmaktadır.	Sesli bir açık kaynaklı yardımcı teknoloji paketi ile etkileşimli olarak çalışmaktadır.	Giyilebilir teknolojiler yoluyla kitle kaynaklı veri toplayarak müze deneyimini oyunlaştırmaktadır.
Katılım *Kitle kaynaklı veriler*	Kullanıcıların aktif katılımı ile çalışmaktadır.	Kullanıcıların aktif katılımı ile çalışmaktadır.	Kullanıcıların aktif katılımı ile çalışmaktadır.	Kullanıcıların aktif katılımı ile çalışmaktadır.	Kullanıcıların aktif katılımı ile çalışmaktadır.
İletişim *Sosyal ağlar*	Tasarlanan oyunlar sosyal ağlar aracılığıyla kişisel müze turları hediye etmek ya da müzik çalma listeleri oluşturarak paylaşımlı olarak dinleyebilme gibi imkânlar sunmaktadır.	Deneyimin sonunda ziyaretçiler dilerlerse bu etkileşimin kendilerine anımsattığı kişisel bir *hikâyeyi* sosyal ağlar aracılığıyla paylaşabilmektedir.	Twitto uygulaması ve Artcode'lar ile gerçek mekânda oynanmaktadır. Ziyaretçilerden alınan geribildirimler ile çalışan, eğlenceli ve etkileşimli bir kurguyla iletişimi güçlendirmektedir.	Nesneler ile kullanıcı arasındaki iletişimi güçlendirmeye yönelik yardımcı dijital bir uygulamadır. Özellikle görme engelli bireylerin kamusal alanlarda sanat eserleri ile etkileşimini sağlamak adına etkin bir yöntem sunmaktadır.	Uygulama gönüllülük esasıyla topladığı kitle kaynaklı veriler ve çoklu dil paketleri ile ziyaretçi-sergi iletişimini güçlendirmektedir.
Dâhil olma *Konum tabanlı hikâye anlatımı ve/veya sanal galeriler*	Fiziksel ve sanal ortamı bir araya getirmektedir.	Fiziksel ve sanal ortamı bir araya getirmektedir.	Fiziksel ve sanal ortamı bir araya getirmektedir.	Fiziksel ve sanal ortamı bir araya getirmektedir.	Fiziksel ve sanal ortamı bir araya getirmektedir.

Kapsayıcılık *Erişilebilir mekânlar*	Sergi etkileşimini dijital uygulamalar ve oyunlar aracılığıyla artırarak mekânsal erişimi güçlendirmektedir.	Geleneksel olarak sabit konumlarında ve yalnızca görme duyusuyla deneyimlenebilen eserlerini sanal ortamda sarmal olarak deneyimle imkânı vermesi ve sosyal mecralarda geribildirim yapma imkanı sunması ile kapsayıcıdır.	Sergi etkileşimini dijital uygulamalar ve oyunlar aracılığıyla artırarak mekânsal erişimi güçlendirmektedir.	Görme engelli bireylerin sanat eserleri ile iletişimini güçlendirmesi bağlamında müze mekânının kapsayıcılığını artırmaktadır.	Sergi etkileşimini dijital uygulamalar ve oyunlar aracılığıyla artırarak mekânsal erişimi güçlendirmektedir.

SONUÇ

Bu çalışmada kapsamlı bir literatür taraması ile müze mekânlarının dijitalleşme süreci ve müze deneyimi kavramları ele alınmıştır. Buna ek olarak, kümülatif durum çalışması yöntemiyle, son yıllarda müze mekanlarında dijital teknolojiler desteğiyle uygulanan oyunlaştırma örnekleri incelenerek müze deneyimini geliştirmeye yönelik bulgular elde edilmiştir. Mekân algısını değiştiren, yeni oyun alanları açan, etkileşim odaklı ve katılımcı sistemler ile müze deneyiminin eski yöntemlere oranla dinamik ve kapsayıcı hale geldiği görülmektedir. Bilgi iletişim teknolojileri ile müze ziyaretleri, öncesi ve sonrasında etkisi süren genişletilmiş bir müze deneyimine dönüşmektedir. Çağdaş müzeler teknolojiyi deneyimi geliştiren bir araç olarak kullanıp eğlenceli, etkileşimli, kapsayıcı, demokratik, diyaloğa açık, çok yönlü bilgi aktarımını destekleyen, ziyaretçisinden eş zamanlı veri alarak süreci geliştirmeyi hedefleyen mekânlara dönüşmektedir. Bu bağlamda müze mekânları ile kentli arasında yeni iletişim köprüleri kurulmaktadır. Daha önce sanata veya müze mekânlarına sınırlı erişimi olan bireylerin erişimine imkân tanıyan dijital duyusal araçlar ile etkileşim ve kapsayıcılık artırılarak müze yapılarının demokratikleşmesine katkı sağlandığı görülmektedir.

Dijitalin gerçek mekân üzerine katmanlaşarak kullanılabilmesi müze ziyaretçilerinin deneyimini dijital uygulamalar aracılığıyla yönlendirmesi adına yeni alanlar açmaktadır. Bu bağlamda müze deneyimi oyuncu uygulamalarla dönüşüp değişmektedir. Üç boyutlu baskı teknolojileri gibi yeniden üretim yöntemlerinin sanat eserlerine dokunsal temas imkânı vermesinin yanı sıra, projeksiyon haritalama ve sanal gerçeklik uygulamaları ile de sarmal deneyimler sunulabilmektedir. Artırılmış ve karma gerçeklik teknolojileriyle gerçek mekânda hareketli ve üç boyutlu olarak deneyimlenen dijital görseller aracılığıyla karşılıklı bilgi paylaşımı akılda kalıcı, eğlenceli alternatif sunum teknikleri olarak yaygınlaşmaktadır. Böylece sanat eserlerinin niteliği kadar müzelerin sunduğu deneyimin de dönüştüğü, çağdaş müze mekânlarının klasik müzeciliğin sahip olduğu katı kurallardan arınmış birer *eğlence merkezi* gibi işlediği görülmektedir. Deneyim ve gösteri odaklı müze mekânları her yaştan ve kesimden kullanıcının erişebildiği ve bir bağlantı kurarak dâhil olabildiği etkinlikler sunmaktadır.

Araştırma sonucunda; müze mekânlarında deneyimi oyunlaştıran uygulamaların dijital ekranlar gibi yaygın teknolojilerin yanı sıra, sanal gerçeklik, artırılmış gerçeklik, karma gerçeklik, dijital tat/koku arayüzleri gibi dijital duyusal araçlar ve sosyal ağlar ile sağlandığı görülmüştür. Bununla birlikte konum tabanlı hikâye anlatımı, kitle kaynaklı veri kullanımı, sanal galeriler ve dijital uygulamalar aracılığıyla erişilebilir mekânlar sunulması ile müzelerin etkileşimli, katılımcı, toplumla daha güçlü iletişim kurarak toplumu bilgi üretim/aktarım sürecine dâhil eden, kapsayıcı mekânlar olma yolunda desteklendiği görülmektedir. Müzelerin öğrenmeyi eğlenceli hale getiren alternatif bir müze deneyimi sunarak, teknolojiyi bu deneyimi desteklemek amacıyla bir araç olarak kullanan uygulamalarla müze deneyimini oyunlaştırdığı sonucuna varılmıştır. Bu bağlamda çalışma, müze mekânlarında ziyaretçi deneyimini artırmak amacıyla kullanılan dijital teknolojik uygulamaları ve bunların kullanım alanlarını analiz ederek olası tasarım stratejilerine zemin oluşturması yönüyle literatüre katkı sağlamaktadır. İleride yapılacak olan çalışmalarda, bu araştırmada sunulan

genişletilmiş ziyaretçi deneyimi parametrelerini destekleyen dijital uygulamaları, gelişen teknolojiler bağlamında güncelleyerek güçlendiren, alternatif oyuncu kurgular geliştirilmesi alana katkı sağlayacaktır.

Authors' Contributions

There is a single author in this paper who contributed 100%.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

The study does not require an ethics committee approval.

KAYNAKÇA

Aytaçlı, B. (2012). Durum çalışmasına ayrıntılı bir bakış. *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi*, *3*(1), 1-9.

Back, J., Bedwell, B., Benford, S., Eklund, L., Løvlie, A. S. & Preston, W., Rajkowska, P., Ryding, K., Spence, J., Thorn, E. C., Waern, A. & Wray, T. (2018). GIFT: Hybrid museum experiences through gifting and play. In *CEUR Workshop Proceedings*, *2235*(4), 31-40.

Bautista, S. S. (2013). *Museums in the digital age: Changing meanings of place, community, and culture.* Altamira Press.

Beale, K. (Ed.) (2011). *Museums at play – games, interaction and learning*. MuseumsEtc.

Bedford, L. (2014). *The art of museum exhibitions: How story and imagination create aesthetic experiences.* Routledge.

Bedno, J., & Bedno, E. (1999). Museum exhibitions: Past imperfect, future tense. *Museum News the American Association of Museums, 78*(5), 38-49. http://mps.uchicago.edu/docs/articles/Past%20Imperfect,%20Future%20Tense.pdf

Black, M. & Hein, G. E. (2003). You're taking us where? Reaction and response to a guided art museum fieldtrip. In Maria Xanthoudaki, Les Tickle & Veronica Sekules (Eds.) *Researching visual arts education in museums and galleries.* Kluwer Publishers.

Bonacini, E. & Giaccone, S. C. (2021). Gamification and cultural institutions in cultural heritage promotion: a successful example from Italy. *Cultural Trends*, *31*(1), 3-22. https://doi.org/10.1080/09548963.2021.1910490

Chae, G., Park, J., Park, J., Yeo, W.S., Shi, C. (2016). Linking and clustering artworks using social tags: Revitalizing crowd-sourced ınformation on cultural collections. *Journal of the Assocition for Information Science and Technology, 67*(4), 885-889.

Chang, E. (2006). Interactive experiences and contextual learning in museums. *Studies in Art Education a Journal of Issues and Research, 47*(2), 170-186.

Çetin, Ö., Erbay, F. (2021). Gamification practices in museums, *Journal of Tourismology, 7*(2), 265-276. https://doi.org/10.26650/jot.2021.7.2.1017009

European Commission. (2018). *Innovation & cultural herritage conference report*, s8. https://ec.europa.eu/info/sites/default/files/conferences/ki-02-18-531-en-n.pdf (19.12.2021).

Epler, P. (2019). Types of case studies. In A. Baron & K. McNeal (Ed.) *Case study methodology in higher education*, p.20-46. IGI Global. https://doi.org/10.4018/978-1-5225-9429-1

Falk, J., H., & Dierking, L. D. (1992). *The museum experience*. Whalesback Books.

Falk, J., H., & Dierking, L. D. (2000). *Learning from museums: Visitor experiences and the making of meaning*. Altamira Press.

Falk, J. H., & Dierking, L. D. (2012). *The museum experience revisited.* Routledge.

Geismar, H. (2018). *Museum object lessons for the digital age*. UCL Press.

Giannini, T., & Bowen, J. P. (2019). Museums and digitalism, In Tula Giannini, Jonathan P. Bowen (Eds.) *Museums and Digital Culture New Perspectives and Research*, Springer. 27-46. https://doi.org/10.1007/978-3-319-97457-6_2

Glass, N. R. (1997). Theory and practice in the experience of art: John Dewey and the Barnes Foundation. *The Journal of Aesthetic Education*, *31*(3), 91-105.

Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? - A literature review of empirical studies on gamification. *47th Hawaii International Conference on System Sciences, IEEE*, p. 3025-3034.

Hein, H. (2006). *Public art: Thinking museums differently.* Altamira Press.

Hooper-Greenhill, E. (1999). *The educational role of the museum.* Routledge.

Kocsis, A., & Kenderdine, S. (2014). I sho u: An innovative method for museum visitor evaluation. In Herminia Din, Stewen Wu (Eds.). *Digital heritage and culture: Strategy and implementation*. World Scientific Publishing.

Koleva, B., Spence, J., Benford, S., Kwon, H., Schnädelbach, H., Thorn, E., Preston, W., Hazzard, A., Greenhalgh, C., Adams, M., Row Farr, J., Tandavanitj, N., Angus, A. & Lane, G. (2020). Designing hybrid gifts. *ACM Transactions on Computer-Human Interaction*, *27*(5), 37, 1–33. https://doi.org/10.1145/3398193

Liu, S., & Idris, Z. M. (2018). Constructing a framework of user experience for museum based on gamification and service design. *MATEC Web of Conferences,* 176, 04007. https://doi.org/10.1051/matecconf/201817604007

Løvlie, A. S., Ryding, K., Spence, J., Rajkowska, P., Waern, A., Wray, T., Benford, S., Preston, W. & Clare-Thorn, E. (2021). Playing games with Tito: Designing hybrid museum experiences for critical play. *Journal on Computing and Cultural Heritage, 14*(2), Article 16. https://doi.org/10.1145/3446620

McDermott, I. (2021). *Synthaisthesia.* Ian McDermott. http://www.ian-mcd.com/synthaisthesia (13.01.2022).

Merriam-Webster dictionary. (2021). *Experience.* Merriam-Webster dictionary. https://www.merriam-webster.com/dictionary/experience (16.05.2022).

Morrison, J. (2021). *Hybrid museums: enhancing visitor experiences.* Calvium. https://calvium.com/hybrid-museums-enhancing-visitor-experiences/ (13.01.2022).

O'Gorman, K., & Harris, S. (2014). *Mastering gamification: Customer engagement in 30 days*. Impackt Publishing.

Pallasmaa, J. (2011). *The embodied image imagination and imagery in architecture*. John Wiley & Sons Ltd. Publication.

Parry, R. (2007). *Recoding the museum: Digital heritage and the technologies of change.* Routledge.

Parry, R. (2010). Digital heritage and the rise of theory in museum computing. In Ross Parry (Ed.). *Museums in a Digital Age*. Routledge.

Parry, R. (2013). The end of the beginning: Normativity in the post digital museum. *Museum Worlds*, *1*(1), 24-39.

Petit, O., Velasco, C., Spence, C. (2019). Digital sensory marketing: Integrating new technologies into multisensory online experience. *Journal of Interactive Marketing, 45*(2019), 42-61.

Pine, B. J., & Gilmore, J. H. (1998). Welcome to the experience economy. *Harvard Business Review,* July–August 1998, 97-105.

Spence, J., Darzentas, D. P., Huang, Y., Cameron, H.R., Beestin, E. & Benford. S. (2020). VRtefacts: Performative substitutional reality with museum objects. *Proceedings of the 2020 ACM Designing Interactive Systems Conference.* Association for Computing Machinery, New York, NY, USA, 627-640. https://doi.org/10.1145/3357236.3395459

Tallon, L. (2019). Foreword. In Tula Giannini, Jonathan P. Bowen (Eds.), *Museums and digital culture new perspectives and research*. Springer.

Tuan, Y. F. (1977). *Space and place: The perspective of experience*. University of Minnesota Press.

Vergo, P. (1989). (Ed.) *The new museology.* Reaktion Books.

Walker, K. (2008). Structuring visitor participation. In Loic Tallon & Kevin Walker (Eds.), *Digital technologies and the museum experience: Handheld guides and other media*. Altamira Press.

Wang, M., Baptista Nunes, M. (2020). A design research approach for IoT gamification of museum visiting experiences, 19th *European Conference on Research Methodology for Business & Management Studies, ECRM 2020,* 309-318. https://doi.org/10.34190/erm.20.048

Williams, D. (1987). A brief history of museum computerization. In Ross Parry (Ed.), *Museums in a digital age*. Routledge, 15-21.

Görsel Kaynakçası

Görsel 1: Morrison, J. (2021). *Hybrid museums: enhancing visitor experiences.* Calvium. https://calvium.com/hybrid-museums-enhancing-visitor-experiences/ (13.01.2022).

Görsel 2: Spence, J., Darzentas, D. P., Huang, Y., Cameron, H.R., Beestin, E. & Benford. S. (2020). VRtefacts: Performative substitutional reality with museum objects. *Proceedings of the 2020 ACM Designing Interactive Systems Conference.* Association for Computing Machinery, New York, NY, USA, 627–640. 631. https://doi.org/10.1145/3357236.3395459

Görsel 3: Løvlie, A. S., Ryding, K., Spence, J., Rajkowska, P., Waern, A., Wray, T., Benford, S., Preston, W. & Clare-Thorn, E. (2021). Playing games with Tito: Designing hybrid museum experiences for critical play. *Journal on Computing and Cultural Heritage, 14*(2), Article 16. https://doi.org/10.1145/3446620

Görsel 4: McDermott, I. (2021). *Synthaisthesia.* Ian McDermott. http://www.ian-mcd.com/synthaisthesia (13.01.2022).

Görsel 5: Berlin Global. (2021). *Mein besuch.* Berlin Global. https://berlin-global-ausstellung.de/#Mein+Besuch (21.02.2022).

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Design principles and concept research in "Interior Architecture Design Studio I" during the pandemic period

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Abstract

This research was conducted during Covid 19 Pandemic -when University Education was provided online- as a part of the Design Studio I course for the first-year students of the Interior Architecture Department of Maltepe University, Faculty of Architecture, and Design in the 2020-2021 Academic Year. 62 students participated in this study. In the study in which the empirical research method was used, semi-structured, and closed-ended interview technique was used to analyze the design education, and design principles approaches to the students along with demographic questions. For this purpose, a written interview form consisting of 25 questions was sent. The data conveying the design preferences showing the self-report scales obtained with the natural observation method were tabulated with the qualitative research method. As a result of this study, it was observed that the students were introduced to the concept of design for the first time during their university years. It was determined that they had difficulty in understanding the concept of design in the first stage of distance education, and then they showed improvement. Despite this, it was determined that as their experience increased thanks to course applications, and discussions, their perceptions of the course content also improved.

Keywords: Interior Architecture Design Studio, Design Principles, Concept Design, Online Learning, Teaching under Pandemic Period

Extended Abstract

Introduction: Humanity has experienced outbreaks of different diseases in the last century, and a new global epidemic has struck. In March 2019, education was suspended for three weeks after the first case was reported in Turkey. While most of the universities with infrastructure in Turkey are keeping up with this change, those without infrastructure have started to look for equipment and applications that will allow them to provide distance education in the spring term of 2019-2020. Educational institutions preferred digital meeting applications such as Zoom, Blackboard, Adobe Connect, Google Meet, Teams and Distance Education Centers of the University (UZEM). All universities decided to continue distance education from the 2020-2021 fall semester. In the 2020-2021 fall semester, both students and lecturers tried not to fall behind in education. This process was initially difficult for both parties: they had different experiences and tried to adapt. According to Bitzer, the first online education platforms date back to the 1960s at the University of Illinois (Bitzer, 1986). Thus, virtual learning has gained popularity with the rise of the internet and the spread of personal computers (Harasim, 1987).

Purpose and scope: Thus, face-to-face education was suspended during the pandemic period due to the Covid 19 disease, which emerged in March in the Spring Semester of the 2020-21 Academic Year. This research aims to investigate whether students who have to start university with distance education have difficulty in understanding this course, which includes design and its principles, and whether it contributes to the development of design perception. "Design Studio I" is a 10-hour course with 2 Theory - 8 Practice credits. In this course, students are asked to convey design principles by using design elements and then create two-dimensional style organizations by using each principle. This course aims to improve students' abstract thinking skills by adding one more principle to their understanding of design. In this context, this research includes whether students actively participate in the "Design Studio I" course or watch the recordings of the course, how well they understand the content of the course in distance education, and how they evaluate their satisfaction levels and design concepts. The problem of the research can be expressed as how students who stay at home instead of going to school during the pandemic period deal with these two contradictory concepts and whether students can perceive issues such as design and concept during the distance education period. The research covers the distance education process that started online in the Fall Semester of the 2020-2021 Academic Year. In addition, this study was limited to 62 students who took the Design Studio I course and attended the Department of Interior Architecture, Faculty of Architecture and Design, Maltepe University, where the researchers were working. This study deals with the basic design topics of design education in the first year of Department of Interior Architecture and inquiries design principles and design methods based on a certain concept. In the context of distance education, the concepts of withdrawal and externalization, which define the quarantine period of the study, were chosen as the subject of the study. In this context, it is thought that the study will contribute to design education and the sustainability of this education with the distance education model.

Method: According to the meeting of Maltepe University Ethics Committee dated 25.12.2020, permission was granted for this study with the decision numbered 2020/17-08. This research covers the group of students who had to attend Maltepe University, Department of Interior Architecture, Faculty of Architecture and Design remotely in the 2020-2021 academic year. In this context, the theory and practices related to the learning of design principles and the development of concepts in the Design Studio I course of the Department of Interior Architecture were explained to the students with the distance education model. In this study, it is aimed to use the empirical research method, which is a qualitative research method. A semi-structured interview form was sent to the students under the guidance of an electronic questionnaire. There are 25 questions in the survey, including demographic questions, approaches to distance education, design education, and design principles.

The Blackboard system, which was used by Maltepe University to support face-to-face education before the pandemic, is an educational technology created primarily to support higher education. The system is an education network designed to provide quality education and to meet the changing educational needs after the pandemic. In this period, students had to start their university education through distance education and came across the design concepts in the education system for the first time. In this context, by constantly sharing information, documents, and content with the students, the design elements and principles were explained on a two-dimensional plane, and the students were provided to design with each organization in each lesson and drawing correction discussions were held. The concepts of "Withdrawal" and "Externalization", which are thought to be satisfactory explanations for the current situation during the pandemic period, were chosen within the scope of the subject, and the students were asked to create two-dimensional compositions with design principles.

Findings and conclusion: According to the findings, the students who participated in this research encountered the design concept for the first time at the university. Most of the students, who were highly and moderately satisfied with the education, actively participated in online courses. In general, it has been seen that the most popular basic interior design department materials are marker, rapido, and charcoal pencils. Although they are compositions created with two opposite concepts, it had been determined that they prefer the same design elements, style, and organization. This shows that students did not take risks while creating a design. It was determined that they had difficulty in the first conceptual study, and that after their experience, the difficulty in the second conceptual study decreased. The recommendations for this study are as follows: face-to-face design education is necessary, especially when creating the concept, but the use of data loading areas in project revisions should be continued with online training. While providing face-to-face education, different digital platforms can be used for applied courses.

Keywords: Interior Architecture Design Studio, Design Principles, Concept Design, Online Learning, Teaching under Pandemic Period

INTRODUCTION

Humankind, who has experienced bacteria, and virus epidemics in the last one hundred years, is going through a new global epidemic. Republic of Turkey Ministry of Health defines COVID-19 as;

The New Coronavirus Disease, a disease occurred in the city of Wuhan, China for the first time towards the end of December 2019 that causes pathogenies such as fever, cough, difficulty in breathing. COVID-19 was declared as a pandemic by World Health Organization (WHO) on March 11, 2020, when the first case was reported in our country. (Ministry of Health)

It is known that COVID-19 infects people if they contact someone who has already been infected with the virus. It was reported that people infected by COVID-19 have a wide range of symptoms, from dull to severe. Today, in this period which has advanced communication, and accessibility opportunities, daily lives are being decided on with its positive, and negative effects. At this point, the education, and production centers have been significantly affected.

The first prominent factor when it comes to planning education in crisis/emergency situations such as pandemic, migration, natural disasters is that these situations require creative solutions. Thus, this emerging situation makes it compulsory for institutions, and decision-makers to think differently, promote creativity and make quick decisions in order to cater for the needs of students, and educators, and to come up with various possible solutions. (Bardakçı, 2020)

Upon the first case report in the world in 2019, and in Turkey in March, education was suspension for three weeks at first starting from March 16, 2020; following this suspend, as the case increase started to affect the whole nation, it was decided to switch to distance education. In Turkey, most of the universities with the infrastructure could keep up with this change, but those that do not have the infrastructure started to look for hardware, and application to provide distance education in the 2019-2020 spring semester. Educational institutions preferred digital meeting applications to video chat with multiple users. Some of these applications are Zoom, Blackboard, Adobe Connect, Google Meet, Teams, and Distance Education Centers of the University (UZEM). As of the 2020-2021 fall semester, all universities started to continue education through distance education. This emerging situation was described on Higher Education Council's official website as;

Our universities have shown remarkable effort, and most of them performed these actions in a short while. Distance education starting dates are as follows: 121 out of 189 universities (64%) on March 23, 2020 (one week after Higher Education Council (YÖK) suspended education at universities), 41 universities (21.6%) on March 30, 2020, 25 universities (13.2%) on April 6, 2020. While the total number of courses offered was 736.341 in the 2019-2020 Academic Year Spring Semester, the total number of courses offered within the scope of distance education after the pandemic was 663.808. 90.1% of the courses in the Spring Semester was offered as distance education. Live classroom practice is being used in 22% of the classes offered through distance education. While live classroom practices were 53.2% "obligatory for every course" at Foundation Universities, this percentage realized at 29.1% at state universities. Live classroom practice realization percentages are as follows: 25.9% in post graduate courses, 24.2% in doctorate courses, 22.1% in undergraduate courses, and 17.8% in associate degree courses. (Council of Higher Education)

Due to the extended face-to-face education restriction on higher education institutions, alternative methods or development, and diversification of some current applications are considered necessary. Higher education institutions have to immediately design an environment in which students can access course materials, content, and homework that is easy to use, uncomplicated, and allows students to find whatever they need whenever they log in. The content, and materials of the courses are different in distance education. This type of education offers flexibility, easiness, and options to those who want to get education and includes more than one formation. With the Covid-19 pandemic, an education environment wanted to be created by creating classes with names such as live course rooms, etc. and lecturers had to transform the courses they usually prepared for face-to-face courses into online courses. Another important point that has to be emphasized here is how these students are involved in the process. Distance education must always offer alternative, and flexible environments; it must focus on designing non-selective education environments and be student-centered. Students can access course materials, activities, and homework even if they miss the course. At the same time, a student who joins the courses can get an opportunity to establish effective, and constant communication with the instructor in an online environment. In this online period which was experienced in the 2019-2020 spring semester and continued in the 2020-2021 fall semester, both students, and instructors made an effort in order not to lag behind the curriculum. This process can be defined as hard at the beginning for both parties: bringing different experiences, and doctrines, but it becomes easier to adapt after experiencing it.

Courses are processes that are on the weekly course schedule at the normal course time, but these time students attend an online classroom instead of a physical classroom. The essentiality is that the university can offer students easy, fast, and detailed access opportunities. At the same time, the university must prepare the aids that can instantly support every physical education necessity of instructors on this different education platform. In addition to this support, universities must also not ignore the support units that students, and instructors can easily access when necessary. Higher Education institutions must gather data about the mentioned process. Moreover, a higher education institution must be a bird-dog about the problems, and whether the support units it had created can or cannot solve the students'/instructors' problems (problems about accessibility, course design, and content creation, exam creation, academic development trainings, technological capabilities etc.), and it must adopt a proactive attitude against problems that may occur instantly.

Higher education has also started to change/transform in this period. It can be seen that perceptions occurred with the advantages, flexibility of communication opportunities of the new world, which was planned before the pandemic have sped up. Higher Education institutions have adopted the following: management/leadership concept, and to be able to have students achieve competences that have to be demonstrated in today's conditions, to be able to develop today's competences accordingly, and to be able to reflect them on students, and these are becoming increasingly accepted by everyone.

The first online educational platforms go back to the 1960s at the University of Illinois (Bitzer, 1986). The platform was used until 1990s. This notion preceded the modern internet, and introduced many of the concepts central to today's online interactions, such as chat rooms, and online lectures (Bitzer, 1986). Other examples of distant learning are college-by-radio at the University of Louisville (Dwayne & William, 1999), and televised courses at DePaul University (Jason et al., 1987). Virtual learning gained popularity with the rise of the internet, and the widespread use of personal computers. One of the first online courses for credits were offered in 1984 by the University of Toronto (Harasim, 1987).

> *Since then, a number of open universities across the globe were founded championing, and advocating for the distance learning methodology. Examples include the Open University of Catalonia (1994–to date) (The Open University of Catalonia, n.d.), Jones International University (1999–2015) (Jones International University, n.d.), and the UK Open University (1969–to date) (UK Open University, n.d.).* (Ahmad et al., 2020: 166)

Purpose of the Study

Face-to-face education was suspended due to the Covid 19 disease that emerged in March in the Spring Semester of the 2020 Academic Year, and this caused a compulsory transition to distance education. During this period, many students who were getting ready for the university exam made their occupation selections, affecting their future. This research aims to research whether the students who had to start university through distance education were satisfied with the course, and whether this course contributed to the design perception development.

"Design Studio I" is a 10-hour course with 2 Theory - 8 Practice Credits. In this course, the students are asked to convey the design principles using design elements, and then to create style organizations in two dimensions using every single principle. It aims to improve the students' abstract thinking capabilities with the design understanding they have developed by adding one more principle in every course. In accordance with these aims, students were asked to make a two-dimensional design on "Withdrawal" and "Exteriorization" concepts which are considered to reflect the pandemic process in a good way. Students have required to both question the given concepts with this design, and conscientiously use the design element, principle, and organization. In this context, this research is planned to be on whether students actively attend the "Design Studio I" course or they watch the recordings of the course, and how well they can understand the content of the course in distance education, their satisfaction level, and how they evaluate the design process with the given concepts.

Research Problem

For the first time in their lives, to learn a profession, students started to study interior architecture, a predominantly practice-oriented department, in an online environment, and this situation constitutes the problem of this research. How students who spend their school period at home instead of school during the pandemic tackle these two contradicting concepts, and whether students can or cannot perceive topics such as

design, and concept during the distance education period can be stated as the problem of the research. What kind of relationship is there between distance education, and design education? Were students able to use design titles in design, and concept studies?

Limitations of the Research

The first limitation of the research is that compulsory education had to be online in the Fall Term of the 2020-2021 Academic Year. Education opportunities, and methods that have to be discovered, and developed support this topic. In addition, this study was limited to 62 students who take, and participate in Design Studio I course at Maltepe University, where the researchers work, Faculty of Architecture and Design, Interior Architecture Department.

Scope

With this study, Interior Architecture Department's First-Year design education is addressed under basic design topics, and methods of design are researched based on a certain concept with design principles. In the context of distance education, it is considered that the study will contribute to the sustainability of this education with withdrawal, and exteriorization concepts which define the lockdown period. In this context, it is considered that the study will contribute to the Interior Architecture Department First Year design education, and the sustainability of this education with the distance education model.

METHODOLOGY

This research; according to the Ethics Committee of T.R. Maltepe University, in Article 6 of the directive; is in accordance with the principles such as devotion to scientific discipline, respect for life, not harming, informing all concerned about possible harm, and risks, responsibility to humanity and society. Allowed at the meeting The Ethics Committee held on 25.12.2020 to implement the research, which forms the basis of the publication, with the decision number 2020/17-08. This research includes the student group that enrolled in the Interior Architecture Department, Faculty of Architecture and Design at Maltepe University in the 2020-2021 Academic Year in which face-to-face education continued because of technological shortcomings, and has to continue their studies through distance education with the effect of the pandemic that started in March 2020. In this context, theories, and practices regarding learning design principles, and developing concepts covered in the Interior Architecture Department Design Studio I course are taught to the students through the distance education model. Within the scope of this research, it was aimed to use the empiric research method which is a qualitative research method. Semi-structured interview form which will be directed with an electronic survey was sent to the students. There are 25 questions in the questionnaire, including demographic questions, approaches to distance education, design education, and design principles.

Participants

This research includes the students who have spent the Fall Semester of 2020-2021 Academic Year with the Covid-19 pandemic, and who took the university exam, and got into Maltepe University Architecture and Design Faculty Interior Architecture Department or got into the department through lateral or internal transfer. This research aims to evaluate 62 students between 18 and 20 who took the Design Studio I course that was ongoing in this period. This research specifically on those 58 students who are receiving university education for the first time, and who have to take the "Design Studio I" course, one of the most important courses of the first grade in the interior architecture department that has intense applied courses.

University Exams and Interior Architecture Department

As we faced an emergency with the start of the pandemic period, rapid transition to distance education, and subsequently, usage of distance education methods by both instructors and students allow them to have a crucial experience. Performing teaching, and learning actions in distance education form was good for students, and instructors. After that, if we act with consciousness and based on experience, it is anticipated that the courses can be given by correcting the mistakes made at the beginning. The predominant positive sides of distance education show up by eliminating the problems that have been faced in time. It is considered that

distance education could be necessary for the universities which meet the foreseen needs, and distance education itself could be necessary for education after the pandemic. Universities received positive feedback regarding reasons such as easy archiving, homework accumulation, easy-to-make exams, insufficient classroom solutions, prevention of paper waste, decrease in instructor needs, etc., and they tried to carry coeducation decisions into effect with regulation and senate decisions. Continuing the togetherness in online environment with human contact is important today. According to Karasar;

> With the usage of the internet in education, traditional student, and teacher concepts have changed; now they have the names learner, and facilitator. Students' role is no longer obtaining the information that is presented to them, at the same time, their role is to search, and find information, make it usable in daily life, and benefit from it. Thus, concept of "lifelong learning" found itself a strong ally. Thanks to this, a large part of society can become lifelong learners in a short while. With the internet, the concept of "place" becomes a concept that does not determine whether or not to benefit from education services. Because on the internet, "somewhere" is "everywhere". "Localization" which is adhered to in curriculums is about to vacate its place to "globality" or "universality" concepts. (2004: 120)

While the education process gets transformed during the distance education process, institution policies such as exams, exam duration, grading, homework, project evaluation, and durations have to be designed in discordance with face-to-face education (Bozkurt, 2020: 6). When the final exam time comes, students are able to find the topics that have been covered up until the final exam on a single page which acts like an archive that includes theoretical, written, visual information, and course recordings, and this can be determined as an advantage of distance education.

As of the 2019-2020 spring semester, those change rules were set out for the interior architecture department with similar regulations. Distance education which was partially provided in previous years has become widespread as a practical solution. After completing the spring semester by gaining experience in distance education, university, students, and instructors started the 2020-2021 fall semester more prepared. Accordingly, universities that primarily addressed problems that occurred in previous semester such as lack of equipment are getting much better, and positive results. The interior architecture department is known as a department that requires excessive discipline and attendance as practice courses gain importance in addition to its theory-based courses when the education program diagram of all universities in Turkey is considered. While this is the situation in face-to-face education, it must not be tackled differently way in distance education. Student participation is a present necessity even in distance education especially in project, studio, and workshop etc. courses that have considerable practice hours and are mostly practice-based. Designs can be brought to a certain point only with exchange of ideas with the instructor throughout the semester. When the learner and edifier provide the necessary technological capabilities, and when the instructor uses visual elements frequently to assist the lecture, and shows sample projects, etc., during online distance education, there will be no difference between this education model and making corrections face to face. At the same time, only one student can understand and learn from his/her mistakes while the instructor checks the student's project, but in distance education, all students can see their projects and analyze the mistakes better. This situation produces more effective and positive results for the student. Interior architecture education can also be adapted to distance education when equipment and technology are sufficient. Also, the students who had problems about obtaining materials due to problems such as long curfew hours at the beginning of the pandemic and stationeries being closed etc. were tolerated. Accordingly, a student who does not attend or listen to the course even in distance education cannot learn something from the course and cannot be successful in any education model. Because the final product that emerges here and the stages that the final product went through until its final form is important for interior architecture education.

It is of great importance for an interior architecture department student to develop himself/herself in different fields and to know those who have gained experience and could be his/her colleagues in the future. Accordingly, thanks to the online system, they seized the opportunity to invite the people they want to the classroom environment no matter where they are with an organization (jury, in-class correction, inviting people to course etc.) made by the lecturer. This is also a preliminary preparation for future organizations. Also, in the period of face-to-face education, it is possible to arrange a meeting with someone from any part of the world.

In the light of the experience that was gained in time through the mentioned situation, it is required for an instructor to continuously develop himself/herself by considering the possibility of continuation of this situation in the next track and the instructor has to think about how he/she can be more efficient for the students. The instructor has to rearrange the curriculum according to what this period brings, the courses given and the courses to be given. It is predicted that the instructors and students who can exert this discipline, regardless of the academic unit, can spend this time becoming more efficient and successful.

Design Studio I Course Fall Semester Content

> *The discipline of architecture and interior design education are known to associate themselves with the design studio approach. The terminology design studio refers to both the implemented pedagogy and the physical environment.* (Ahmad et al., 2020: 165)

In Design Studio I course, it is ensured that students' two-dimensional expression skills are developed by giving particular importance to abstract concepts and design elements such as line, style, form, color, and texture which are tackled with more complex phenomenon at the beginner level of basic design principles, starting from dot. The general purpose of the course is to develop creative power and aesthetic sense and to teach the definition of space, basic concepts, and general principles of design. By providing theoretical and applied education two days a week for ten hours from the first week of the course till the end of the semester, it is ensured that the fictional studies that were created through sketch, presentation board preparation, and on a certain theme are evaluated repeatedly by Q&A and commentary. Also, the final step of the process is taken with approaches such as a tendency to achieve expressions from different aspects by inspecting the presentation boards that the student has developed by changing the presentation boards repeatedly through student practices which change according to the topic in every course through student implementations such as creating texture, color, background plane. Model practices for the perception and expression of two-dimensional practices as three-dimensional studies are tackled with towards the end of the semester. The purpose here is to initiate the first structural perception by sizing the design which was made in abstract concept while overseeing space setup, human and other factors. Uluoğlu (1990) determined these features in her study on design studios as follows.

- *Design studio is the most important indispensable part of architecture education.*
- *No matter who teaches design, design is learned by designing.*
- *One-to-one meetings and criticizing are the education methods in design studio.*
- *As information on how to design is received from the coordinator, the coordinator assumes the essential role.* (Uluoğlu, 1990)

Basic Design Elements and Design Principles

The basic design principles and the elements that determine their substructures are being used as an expression method in the visual compositions required to be created. The designer's age, education, culture, impact of the environment on him/her, his/her psychology, mental, intuitional approaches, imagination, expressiveness and ability to express are a factor when reflecting a developing idea on paper. Every designer's approach can vary according to his/her personal point of view and mental activity to the extent of his/her perception in terms of tackling with approach and setting.

Design elements that constitute the design are based on the explanation of the stylistic setting that the designer put forward, design process and indication of the effectiveness of certain concepts created in the designer. The first element creates that indication is dot. The purpose of using the element of dot in a composition is a locator with the effect it gives. It is a dimensionless design element that has no width or length, and its height cannot be measured. Dot is highlighted with the intensity distribution blotch rate of its spaced or frequent placement on a drawing plane and creates a line or a surface if it is made with equal intervals (Yılmaz, 2009: 27). Line is an essential form of expression for designers. It is used as a means of manifestation tool to express purposeful and purposeless thought and feeling that cannot be expressed verbally. Different variations of line can be created with different materials and infinite tools (Öztuna, 2007: 59). While lines that are rounded, circular, curved, and do not have hard edges have soft effects; straight and horizontal lines signify stillness, inactiveness, and refreshing; thick broken and intersecting lines, lines that are vertical when compared to horizontal or traverses that disturb parallelism, and contra-directional ones create dynamic effect (Özol, 2012: 63).

Style which is another topic of design elements is a tool, technique which was developed to construct the surface as two or three-dimensional as a visual element which was created by turn and curves gathered by the multiple line that indicates the existence of objects (Atmaca, 2014: 51). It gains value with the effectiveness of line and color while it creates the definition of form with its sizable, blotchy state, it can be spotted with its symmetric, asymmetric, organic, inorganic, artificial etc. state (İncearık, 2011: 24).

The repetitive effects of similar perceivable sensory manifestation on the faces of the internal structure features of all beings in nature are called texture. Texture can be distinguished with its physical structure such as opaqueness-brightness, adverseness, unevenness which can be identical or different. Copying the textures in nature or the effort of creating the new independent of them, emphasizes the aesthetic approach to creations (Özol, 2012: 210). For texture designers, it is a tool of which different versions are used in composition to increase perceptual selectivity without changing the color or tone value (Öztuna, 2007: 88).

The sense created by light rays reflected from objects in the eye and can be perceived by the eyes and brain is called color. Colorful rays that are decomposed as red, orange, yellow, green, blue, dark blue and purple by the refraction of sun light which consists of seven different colors on a glass prism is called spectrum. When all colors composing the spectrum gather, they create the color white; if there is no ray, the color black is created. Design is also attractive because of its numerous effects that it creates on people and its meaning power in a composition (Yılmaz, 2009: 31). Paleness, darkness levels of surfaces are called tone value, lighting level of light on objects is called tone (Atmaca, 2014: 23). All topics such as dot, line, surface, style, form, texture, color, and light create the design elements. Conscious usage of the design elements on the surface is realized with design principles and formal organization topics.

While the Turkish Language Association defines the concept of influence as a set of results, reactions, events, a reason for perspectives to occur, the impression made on someone; the visual effect is the conception that we have with an external stimulus that the environment provides, and reaction is produced as the reflection of feeling and thought as a result of mental activities an individual stimulates. While it is a factor in perceiving the messages obtained by the sense of sight, it is a power for inference. The theory in which the effect which was created when the parts that create the entirety itself is perceived is called Gestalt. Wertheimer developed closeness, correctness, similarity, cloudiness, continuity, symmetry, motion, experience factors of the theory which are about perception (Aydınlı, 1992). According to the Turkish Language Association's definition, words we use to talk about the concepts and creatures whose existence cannot be defined with one of the receptors, but whose existence is known by belief and feelings are abstract; the exact opposite of this word which describes the things that we can perceive with feelings and whose existence can be proven are concrete. In studies which have high visual value and can evoke the audience's feelings and thoughts and in which stylistic abstract and concrete expressions are included basic design principles are visual effect tools, and their definitions that describe the activity of each one in the composition are briefly as follows.

Design principles can be collected under 5 topics (Figure 1). One of these principles is balance, which is the fictionalization of the bond between object, style, color, texture, direction, gap, and measure that are the factors in the addressed artistic study in a harmony as a visual effect (Atmaca, 2014: 70). Balance, which is also a principle of nature, is divided into two variations by defining the free placement of elements such as symmetry, dark-light, rounded-cornered, big-small, curved-straight, horizontal-vertical, few-many, full-empty etc. that conflict with each other and have differences between them in terms of color, style, harmony in a composition (Yılmaz, 2009: 36). Integrity is the name of the unity that is created by the concourse of harmony and variation rates of elements that create the composition. The most important factor in the creation of unity is that there is an aesthetic connection between each part that has an indicator in its principles such as conflict, balance, sovereignty, variety, and coherence (Atmaca, 2014: 86). While the factors that also allow us to focus on the design have the same style, size, texture, color, and explicandum create the aesthetic bond, they also prevent the untidiness and unnecessary emphasis in the composition while creating the aesthetic bond (Becer, 2002: 72).

Figure 1. Basic design principles

The principle of hierarchy is a bridge that connects two opposite points to one by changing the rate, color, texture, style, or direction with the determined importance level according to the elements included in the design and the qualities of the desired factors emphasized. The mass media is an approach designers use to draw attention to the points they want to emphasize in their art practice; when it is insufficient, it cannot be transmitted to the audience and cannot direct the audience to interpretation (Öztuna, 2007: 44). The concepts of ratio and proportion are tried to affect the indicative value of the perception, which is related to each other in terms of the size and size used in the arrangement of a composition. Positioning the elements placed in the composition much larger and more dispersed than necessary, and inaccurate placement of the size, tone, stain and shadow of the narrated elements will create an extremely wrong expression (Yılmaz, 2009: 36). If a correct calculation is made between the objects and the proportion and size are created, the accuracy and artistic quality of the work will increase (Atmaca, 2014: 94).

In design principles, contrast is the placement of elements that are different from each other in terms of visual and color quality to make the design recognizable at first sight, to make it more interesting than it is, and to make it eye-catching (Williams, 2008: 13). Dominance, alias emphasis is the process of bringing something into prominence with different methods by determining the visual perception order of parts that are gathered in the practice, and if the audience do not keep looking and enjoy the emphasized parts, then there is a visual distortion (Öztuna, 2007: 37). Movement is a design principle that allows for transition follow-up by observing elements such as line, form, style, and curve from one point of the work to another when one looks at the composition as a whole and aims to let the audience spend more time while looking at a visual than usual by making the design unstable (Erdoğan, 2019). The rhythm, which is an element in which the movement in the application is felt and what is wanted to be emphasized is reflected in the whole design, creates visuality by evoking the movement with the regular repetition of the elements or motifs followed. Appeals to the eye and affects the viewer by providing visual continuity in the design (Reardon, 2004). Repetition is the usage of fictional similarity by placing background, photograph, graphical shapes, and lines in the same way or closely to provide continuity and integrity in the design (Erdoğan, 2019). The movement that is pointed out by the entirety of dots and lines that are directed on the design which is created in compliance with the message which is desired to be given by the designer to the audience is called direction (Becer, 2015: 62). Harmony is the coherence and similarity of the interaction of elements and independent parts that create a composition, and concord is the bond that is developed in accordance with the integration factor in order to be able to perceive the factors that are repeated in a practice as a whole (Ocvirk, et al., 2015: 49). Even if there are contrasts in the work, linear approaches that have the quality to create the visual and parallel harmony between the measures and value that affect the design that was created, and similarities of linear approaches in terms of style, color, texture, direction, gap, and style make concord stronger (Atmaca, 2014: 78). Unition of design elements and design principles can create a visual composition. The idea of forming this unity creates the design itself (Figure 1). Modern design educational principles advocate for combining arts with up-to-date practices (Nerdinger, 1985), through a range of learning methodology that brings together lecture courses (theory) and workshops (practice) (Gropius, 1965; Gropius, 1968).

Formal Organizations

To make any conscious design, formal organizations have to benefit while design elements and principles are used together. Formal organizations can be explained under 5 main topics. Central organization can be described as the first arrangement that is involuntarily used by everyone who has not received design education. Central organization occurs as a result of having geometric or organic style that is being used right in the middle of the composition. Second and third group styles do not spoil the grouping in the center expression by being around the styles which are also around the center. Central organization usually has symmetry, but, if required, another center can also be achieved by moving it to a different point of the central composition.

Linear organization, as its name signifies, can be expressed as the arrangement of the styles that are on a linear shaft. This linear order can be made of different systems that are composed by increase and decrease in a consecutive system. Also, the designed linear order can be created with a certain parallel repetition, a diagonal rhythmic order or the ray effect.
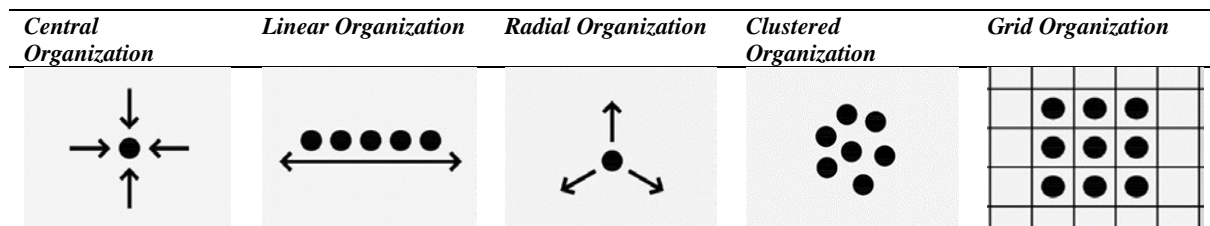
Central Organization	Linear Organization	Radial Organization	Clustered Organization	Grid Organization

Figure 2. Formal organizations

The radial organization is an arrangement in linear expression like a sun ray that comes from any center of choice. Focal point of the radial organization can be in the middle or on the edge of the designed composition, and it can even be outside of the composition. Cluster organization can be formed with the grouping of close and similar styles in different sizes or by having common similar features in textures. Group numbers and features can be improved in this organization in concern with the design ability and liking of the designer. Finally, grid organization can be defined as a quadrature or grid system created with certain intervals. Squares or grids used in this system constitute a base for the system which will be used as reference lines, and they can be fictionalized with similar intervals or arranged consecutively. Also, the arrangement can be parallel in horizontal order or can be considered diagonal. Formal organizations make it easy to tackle with intuitional approaches in the arrangement of styles which are a product of thought in a logical framework (Figure 2).

The Process of Creating Concept and Design Product

Essentially, design is a mental prior condition for every conscious event. Design is a must in order for a conscious event to take place. It uses all kinds of opportunity of cognition as it has cognitive quality. As design improves, emotionality styles (imagery), categories of mentality (concept) and reasoning ability starts to transform into founder quality (conditional and limited) from its arranger quality, in other words, the quality that requires unconditional existence. The existence of concepts in design is dependent on the application of the rules derived from simple to complex relationships (Kömürcüoğlu and Altaş, 2003: 16).

According to Çelik and Aslan, the interior architecture design course's content is being discussed to search for answers to four concepts. These are reasoning / concept development, discussion / criticism, questioning / analysis and evaluation / design. The product of all these concepts creates the mental processes that include obtaining design information and to be able to use them and contribute to design method. However, these mental processes are not technical and practical usage of design knowledge oriented; they are thoughts that are creating a style oriented. In short, it is the discussion on how to achieve original way of thinking (designer thinking) (Çelik and Aslan, 2012: 57-58).

One of the most important aims of design studio course is to direct student to abstract thought and thinking conceptually. Here, the aim is to make student realize that he/she has to make conscious choices and organizations while applications are being interpreted accompanied with an instructor. In this process, the student learns how to intellectually address the style and arrangements that he/she chose instinctively. Criticizing is a crucial factor as a transfer method in conceptual approach fiction of design studio course. It has

a structure based on sharing an idea for helping the designer in the direction to follow and instructor's and student's deed in moving forward on the same road. Supporting the development of mentality with Q&A practice is crucial in producing idea and formulating concept deeds. Realizing, questioning, thinking, learning, adoption and analysis can be presented as the stages that student has to pass in the applied stages. Students who cannot still internalize the transfer language at the stage in which conceptual references are transformed into design proposal, use their basic abilities to generate their design ideas and their intuitional or analytic decisions that they make in this process directly affect the targeted spatial practices in the design course. Determining the effect of the concepts taken as reference on design tendencies through student remarks allows the inspection of the design processes allocated for concept representations (Türkmen, 2020: 246).

FINDINGS

Maltepe University is an institution that was using today's communication opportunities before the pandemic and it guides both its instructors and students and when the pandemic started, it easily switched to distance education without any problems as it has a strong infrastructure. It supported this issue with webinar trainings and meetings such as training of the trainee in order for its students to get a complete education by improving the same infrastructural system in the 2020-2021 Academic Year Fall Semester. The Black Board system, which the university used before the pandemic to support face-to-face education, is an education technology created primarily to support higher education. The system was created with the aggregation of thorough education understanding and technology. It is an education network designed to supply quality education and meet the educational needs that have changed after the pandemic. This study was carried out Black Board education network within the 2020-2021 Academic Year Fall Semester. In this period, students had to start their university education through distance education and came across the design concepts in the education system for the first time. In this context, students were allowed to design with every principal organization in each course by explaining design elements, and principles one by one on a two-dimensional plane by constantly sharing information, document and content with students and drawing correction discussions were held about the topic.

After tackling with all design principal topics, it was deemed suitable to choose topics that reflect the current time in the abstract when the current time and design function considered. The "Withdrawal" concept, considered to explain the current situation during the pandemic period satisfactorily, and the "Exteriorization" concept, which is being dreamed about, were chosen as part of the topic. Students were asked to create two-dimensional compositions by maintaining these concepts, design elements, principles, and visual organization. Withdrawal concept was considered appropriate when it is considered that the living spaces of students have become a classroom and most of these students who have recently attended to university have to stay home within the scope of the curfew order for younger than 20 years. After that, the second concept, which describes the transformation of the lives of these students, who will produce designs on a two-dimensional plane by tackling the withdrawal concept into normal, was introduced. The design in which students tackled with the withdrawal concept and return of the social life opportunities that students dream about with "Exteriorization" concept was expected to be designed by the students with opposite point of view and organizations more different than its factors, elements, and principles. According to the Turkish Language Association Dictionary, "Withdrawal" is expressed as being bored or being buried under (TDK). "Exteriorization" means getting out from a closed place. Sixty-two students taking the Design Studio I course participated in the design process, which was made with concepts considered appropriate in explaining the pandemic period. 61.29% of these students are women, and 38.7% are men.

The 2020-2021 Academic Year started with distance education at all universities due to the pandemic. Therefore, the students who usually change cities for university education did not feel the need to change their cities because of the distance education decision. Out of 62 students who take Design Studio I course, 6.45%, a very small portion, changed their cities for university education just in case. 67.74% of these students did not change their cities, and 25.8% stated the need for changing their cities when face to face education begins (Table 1).

Table 1. Did you change your city to receive your current university education?
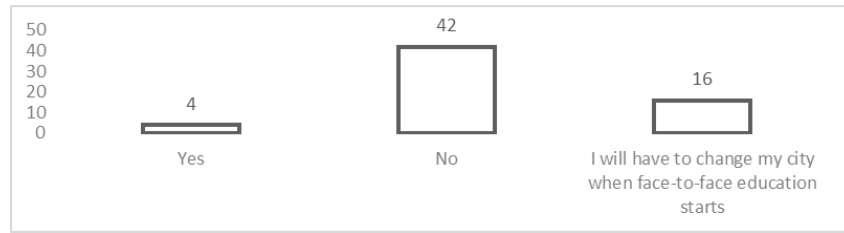
87.09% of the students who participated in the survey are high school graduates, 12.9% have never studied at a university before (Table 2). It was determined that the students who have been to university before are associate degree graduates of design departments such as interior design, restoration, and architectural restoration and 1 of them made lateral transfer from the interior architecture department. Except for the 4.83% of the students who received associate degree education, 95.16% had never previously received design education before, and they come across the design concept for the first time (Table 3).

Table 2. The school you went to before your university education?
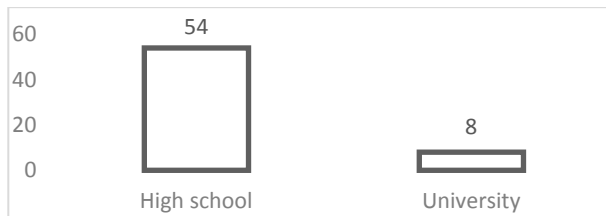
Table 3. Have you ever received education current regarding design before your current university education?

Within this scope, a question regarding how these students who have to receive courses regarding design in distance education format were affected by "Design Studio I" course was asked. Most of the students, 38.7%, stated their indecisiveness by answering the question as neither satisfied nor dissatisfied. As the other majority, 32.25% emphasized that they are satisfied. While a small portion about 8.06% indicated they are very satisfied, a substantial percentage about 14.51% stated they are dissatisfied and also, a not to be underestimated group of students about 6.45% stated that they are extremely dissatisfied (Table 4). 87.09% of these students actively attend online courses. 12.09% stated that they watched recordings in a different time period after the course (Table 5).

Table 4. How did it affect you to get design education online?
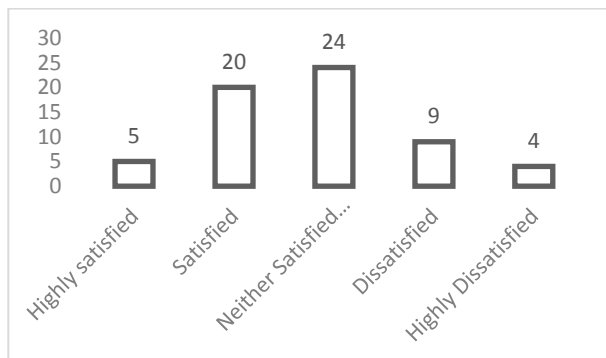
Table 5. Do you attend the online courses or do you watch the recordings?
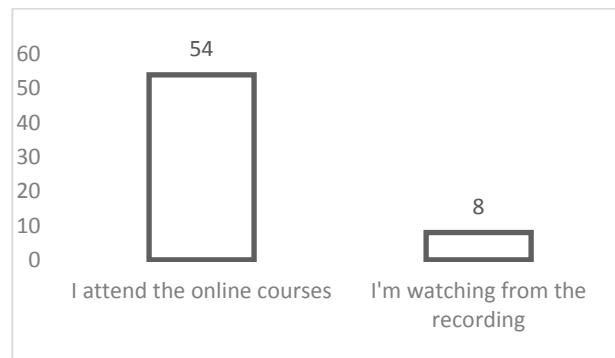
Certain negative reflections of distance education in which students have faced many difficulties on the perception of design concept is envisioned. The question asked within the design understanding which continues according to the table shown in Table 6 and in the online course provided through education network is do you feel yourself developed towards abstract thinking. 51.61% of students said yes, 30.64% said strongly agree. 3.22% said disagree and 1.61% said strongly disagree while 12.9% stated that they were indecisive.

Table 6. Do you feel that you have improved yourself about design or abstract thinking thanks to your   currently ongoing education?
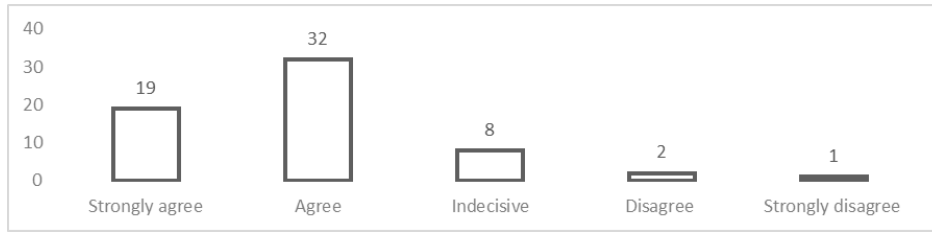
Different drawing and design materials are used in architecture department which is an applied discipline. Especially in face-to-face education, a lot of different techniques such as how to hold a ruler, pencil usage etc. can be shown to the student and also, false use can be corrected instantly within the workshop environment. However, in distance education, students had to discover material and usage techniques on their own. They were asked which materials they used the most during this period. Students were allowed to mark more than one option, and their preferences are as follows: 26.53% used marker pencils, 23.46% used rapido pencil, 20.4% used charcoal pencil, 13.77% used colored dry pen and 11.73% used collage method which is known as the cut and copy method. Data on other preferred methods can be seen in Table 7.

Table 7. What visual expression materials do you prefer while creating a design in Design Studio I course that you are currently taking? (You may choose multiple options)
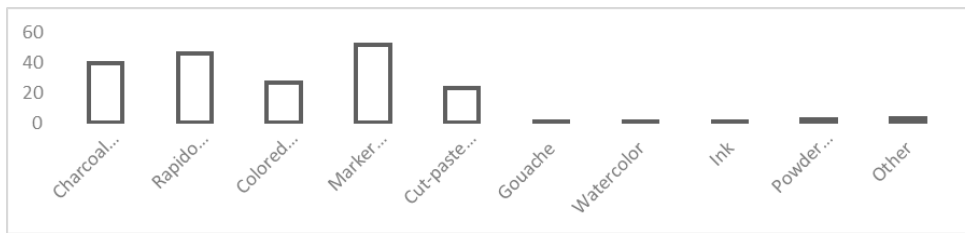
The first concept that students were asked to design in totality of design and concept relationship was "Withdrawal". While thinking through with this concept, 33.96% of the students primarily chose design; 28.3% chose line and 21.38% chose color in their design element preferences. In the context of withdrawal concept, square is a commonly used shape with 33.05% and subsequently circle with 29.66% and triangle with 23.72%. 38.33% preferred central arrangement in formal organization usage. Subsequently, it is seen that radial arrangement is preferred with 17.5%, and grid and linear arrangement is an equal reason of preference (Table 8). In the context of design principles, while the students who tackled with withdrawal concept used coherence factor, 37.5% did it with repetition of shapes principle. It is seen that 49.33% preferred asymmetric balance to create balance principle. While creating hierarchy principle, a great majority, 60.56%, used different thicknesses and to create proportion principle, 54.21% did it by creating dimension differences. Finally, in the context of dominance/emphasis principle, 49.45% preferred to emphasize mostly with dimensional quests (Table 8).

Table 8. Preferred design factors while designing the withdrawal concept

Design Element Preferences

Style Preferences

Formal Organization Preferences

Radial: 21, Grid: 19, Central: 46, Linear: 19, Clustered: 15

Coherence Factor Usage

Rhythm: 33, Repetition: 42, Continuity: 37

Balance Factor Usage

Symmetry: 14, Asymmetry: 37, Radial: 24

Hierarchy Factor Usage

Trees: 5, Clusters: 23, Thickness: 43

Proportion Factor Usage

Size: 45, Ratio: 25, Pieces: 13

Dominance Factor Usage

Color: 35, Size: 45, Form: 11
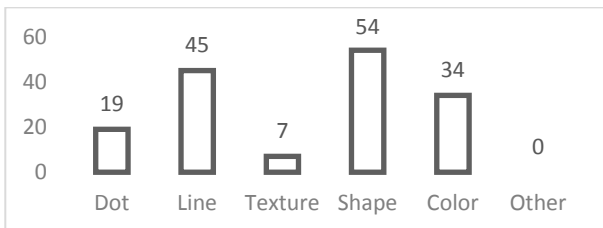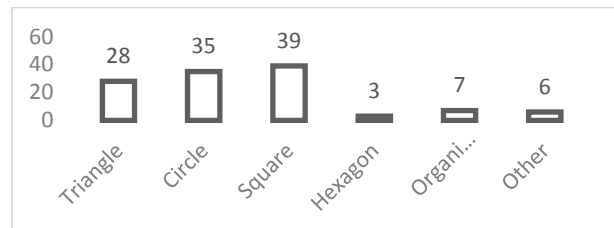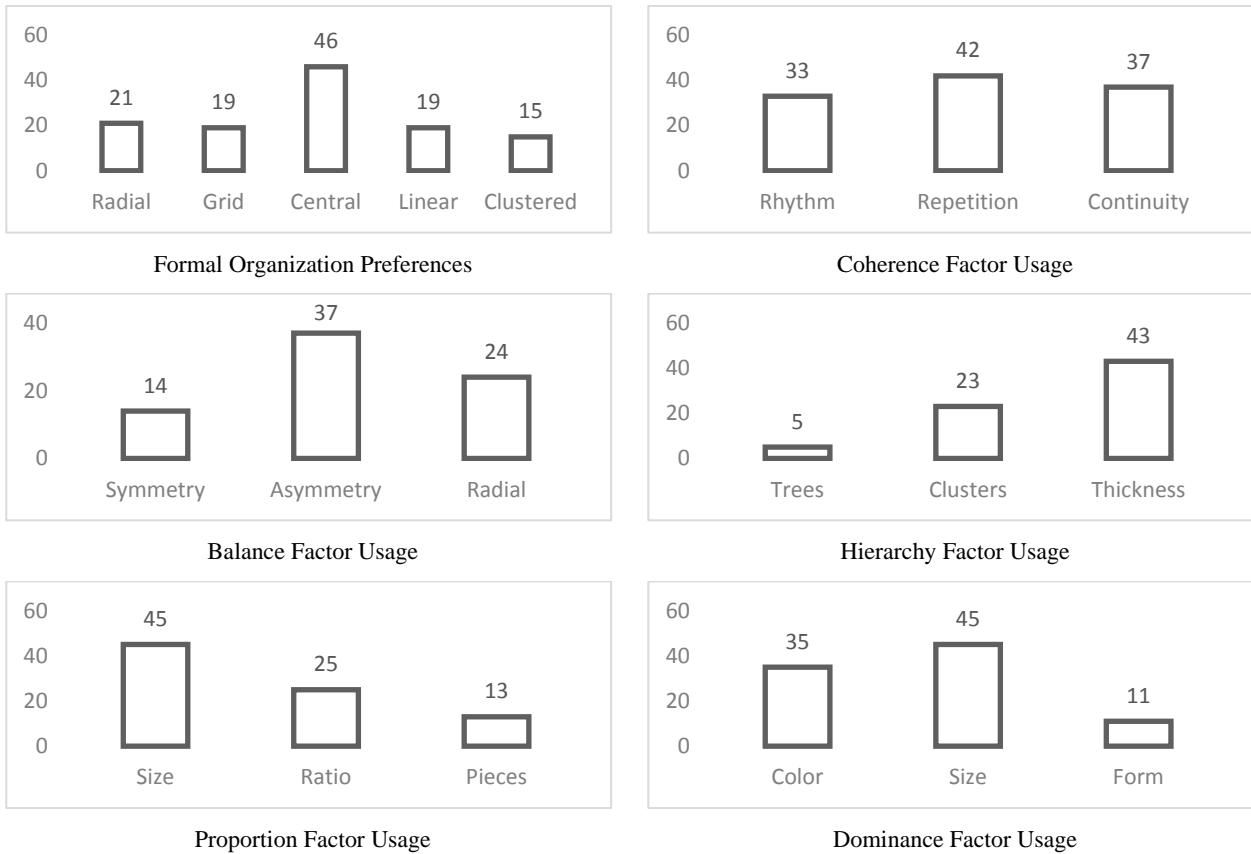
The process was not easy for the students who started to think design oriented with a concept for the first time. Thus, after the practice, they were asked whether they had difficulties or not while designing with the Withdrawal concept. Those who expressed themselves by saying I had difficulties and 'neither had difficulties nor had no difficulties equal at 29.03%. Percentage of I had a lot of difficulties, and I have not had any difficulties is quite low (Table 9). In this context, it was observed that 33.87% of students, which constitutes a great majority of the participants, had difficulties in the first concept practice.

Table 9. While designing the concept of "Withdrawal"

I have not had any difficulties: 1, I had no difficulties,: 18, Neither had difficulties nor had no difficulties: 18, I had difficulties: 21, I had a lot of difficulties: 4
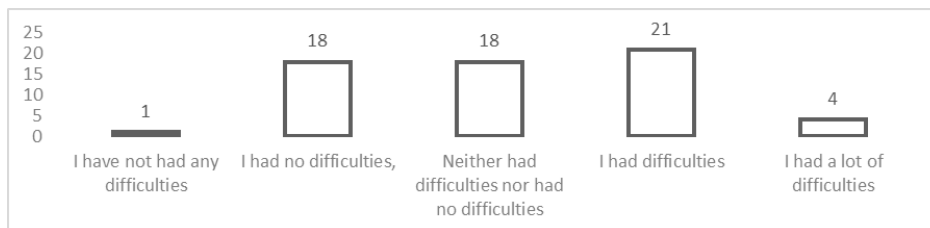
After the first conceptual design process, students were asked to think on the "Exteriorization" concept and to enter the process. In this process, discussions were held on the unity of design elements, principles, and organizations by making corrections time and again. Whole of design factors which were preferred within the scope of the "Exteriorization" concept were presented in Table 10. According to the table, design element choice of the students who had the opportunity to select multiple options are as follows: 38.77% preferred to use shapes, 25.85% preferred to use lines and 21.08% preferred to use color. Among the used forms, 34% chose rectangle, 33% chose circle and 23% chose triangle. Central organization was chosen with 45.45% when the question which organization did you use asked. Subsequently, following preferences are seen: radial organization with 18.18% and grid organization with 13.63%.

Table 10. Preferred design factors while designing the exteriorization concept

Design Element Preferences

Style Preferences

Formal Organization Preferences

Coherence Factor Usage

Balance Factor Usage

Hierarchy Factor Usage

Proportion Factor Usage

Dominance Factor Usage
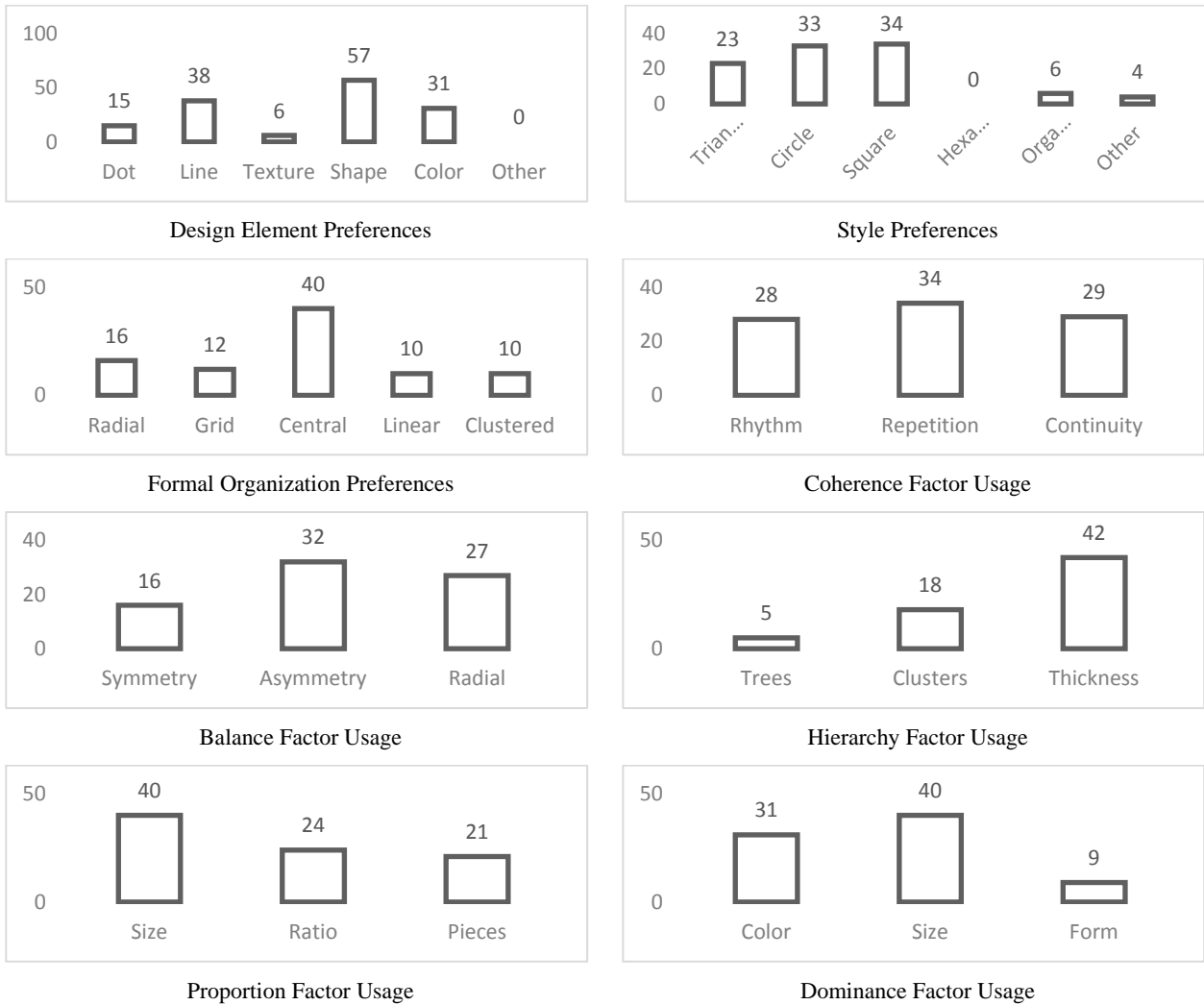
When we looked at how the students use design principles while designing with the "Exteriorization" concept, it can be said that they tried to achieve coherence in the design with the following topics: 37.36% repetition, 31.86% continuity and 30.76% rhythm. In the context of concept, 42.66% of the students tried creating asymmetric balance and 36% tried creating radial balance. Within the scope of the hierarchy principle, a great majority of the students, 64.61%, composed it again with the thickness principle. It was determined that 47.05% formulated the proportion principle with dimensional quests and 50% laid stress with dimension differences within the scope of the dominance principle (Table 10).

Table 11. While designing the "Exteriorization" concept
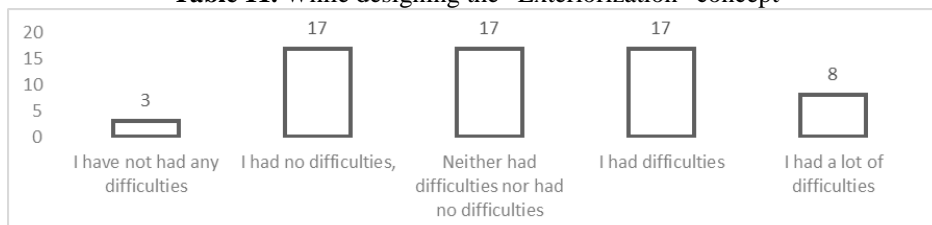
After the 2nd Concept practice, which was conducted in Design Studio I course, we asked students whether they had difficulties or not while using elements, principle, and formal organizations in concept production. In this context, those who said they did not have difficulties and those who are indecisive said they neither had difficulties nor had no difficulties and also, those who stated that they had difficulties have the same percentage

at 27.41% (Table 11). Student practices for the tackled concepts within the scope of the course can be seen in Table 12 and Table 13.

Table 12. Visuals of the studies done for the withdrawal concept

Table 13. Visuals of the studies done for the exteriorization concept

RESULTS, DISCUSSION AND SUGGESTIONS

In this study, conceptual applications related to the distance education process and design processes were made. Criticism sessions were held through applications in live courses and semi-structured questions were asked through electronic survey. In this context, there are 62 students who attended the course and survey study. A great majority of these students who participated in the survey within the education system which continued for one year through distance education did not change their cities. 1/4 of the students stated their necessity to change their cities when face to face education begins. It is inferred that those students are not in the city of Istanbul where the university is located. Most of those 1st year students who are between 18 and 20 are high school graduates. A small group of them has never studied at university before. It was seen in the survey answers that those students studied departments related to design field. Therefore, the same small group of the students, who said yes to the question have you ever received design education before, consists of the same students. The majority which consists of high school graduates came across the design concept for the first time at university.

Students had difficulties while getting used to the system in the fall semester which was the first semester of distance education process. Therefore, within the scope of the topic, majority is seen indecisive when they state their education satisfaction level, and the secondary majority is seen satisfied. Most of those students who are highly and averagely satisfied with education, actively attended the online courses. A small minority indicated that they followed courses through recordings. Percentages of those students and the minority of students who are not satisfied with education are equal. Therefore, it is clear that watching recorded courses of the interior architecture department which is especially based on design, application and corrections is not appropriate for this department and thus, dissatisfaction increases, and students fail to understand the courses. It can be understood from the positive answers of more than half of the students who attend the courses that they have improved themselves on abstract thinking. In the richness of design materials, students made their own design discoveries during distance education. In this context, it was observed that the most popular basic interior architecture department materials in general are marker, rapido and charcoal pencil. Students' element, principle and formal organization preferences were tackled within 2 dimensional compositions created with "Withdrawal" and "Exteriorization" Concepts that were chosen in design and concept relationship as a tribute to the current period. In this context, the students who were asked to think on these two opposite concepts were again expected to choose opposite design tools such as style, organization etc. As the result of the practices and survey, it was observed that the students again benefitted from the same shape, line, color etc. In this context, it was observed that the most popular shape in both concept practices was square. It was determined that they mostly choose central arrangements and radial arrangements under the formal organization title. Although they are compositions created through two opposite concepts, it was determined that they choose the same design elements, style, and organizations. This shows that students do not take risks when they create a design.

When the visual compositions that are created for the "Withdrawal" and "Exteriorization" concepts tackled under the design principles title, it can be seen that they create the coherence element with the repetition of shapes, they create balance with asymmetry, they create the hierarchy principle by using different thicknesses, and they use the proportion and dominance principles with dimensional quests. Only an internal orientation in the withdrawal concept during the creation of shapes in organization can be seen; and in exteriorization concept, continuous repetition of the shapes towards the outwards of the composition can be seen. As a result, it was determined that the 62 students who received design studio I course in distance education format in interior architecture department in the 2020-2021 academic year prefer the same element, principle, and organizations when they tackle with two opposite situations. While the percentage of the difficulty that the students faced in the first withdrawal concept practice was high, balance was seen in the difficulty percentages in the secondary conceptual design process. As the students are in the first semester of their education life, it is normal in terms of the difficulty percentage development of them. Although practices were done on two different opposite concepts, similarities were determined in this process.

With this research, it can be expressed that at the end of the distance education process, most of the students are trying to improve themselves on their professional education awareness, and they somehow try to verbally express themselves in the courses. Although there are students who do not always attend the courses and state

that they watch the recordings, it is considered that their statements about falling behind in this applied discipline and not being able to improve themselves creates a negative effect in their participation in education. Also, students' tendency to abstract thinking and their familiarity with it was clearly seen. If the narratives are summarized in this direction,

- Students first met the concept of design during their university years.
- In the first stage of distance education, they had difficulty in understanding the design title, then their adaptation increased.
- They had to familiarize themselves with the design materials.
- At the end of the term, their understanding of abstract concepts and their satisfaction with distance education increased.
- It has been determined that they use the same design principles while working on two opposite concepts.
- It was determined that they had difficulty in the first conceptual study, and that after their experience, the difficulty in the second conceptual study decreased.

It would be appropriate for the educators who are responsible for the management of the courses to conduct studies on online education and its derivatives with more students and educators. Considering the outputs of the study, the following suggestions can be made;

- The necessity of face-to-face design education, especially while creating the concept, but the use of data loading areas in project revisions should be continued through online education.
- While applying online education, different digital platforms can be used for applied courses. The communication between the instructor and the student can be strengthened with the methods that require short-term practice and expression that can keep the perceptions of the students awake for a long time in front of the screen.
- Psychological problems, difficulties in material supply and learning problems were experienced by students who had to take online courses for the first time during the pandemic period. It is necessary to continue the supervision of the digital materials that students can access in terms of strengthening the communication of educational institutions, uploading documents using data systems used in distance education, especially theoretical information.
- While the communication between the student and the educator is encouraged in online education, cooperation between the students should also be ensured. When using active learning techniques, this communication should be supported with feedback. While managing the timing of the tasks assigned to the student well, it is necessary to prepare them for the inferences that can be drawn in a certain time.

Authors' Contributions

The research was conducted by three researchers. The authors contributed equally to the study.

Competing Interests

It is out of question that the authors have no personal or financial interest within the scope of this research. Mentioned authors contributed to the study on a complimentary basis. Therefore, they do not have declarations of interest.

Ethics Committee Declaration

Researchers did everything according to every necessary ethical rule throughout the research process. The data obtained from the participants was only used for the research, and the research ethicprinciples were used as base during the reporting of the study. This research; According to the Ethics Committee of T.R. Maltepe University, in Article 6 of the directive; in accordance with the principles such as "devotion to scientific discipline, respect for life, not harming,

informing all concerned about possible harm and risks, responsibility to humanity and society". Allowed at the meeting The Ethics Committee held on 25.12.2020 to implement the research, which forms the basis of the publication, with the decision number 2020/17-08.

REFERENCES

Ahmad, L., Marco, S., Musfy, K. (2020). Interior design teaching methodology during the global COVID-19 pandemic. *Interiority, 3*(2)*,* 163-184. http://dx.doi.org/10.7454/in.v3i2.100

Atmaca, A. E. (2014). *Temel tasarım.* Nobel Akademik Yayıncılık.

Aydınlı, S. (1992). *Mimarlıkta görsel analiz.* İTÜ Yayınları.

Bardakçı, S. (2020, 7 June). *Pandemi döneminde uzaktan eğitim.* Turkish Higher Education Quality Council. https://portal.yokak.gov.tr/makale/pandemi-doneminde-uzaktan-egitim (11.01.2021).

Becer, E. (2015). *İletişim ve grafik tasarım.* Dost Kitabevi Yayınları.

Bitzer, D. L. (1986). The PLATO project at the University of Illinois. *Engineering Education*, *77*(3), 175-80.

Bozkurt, A. (2020). Koronavirüs (Covid-19) pandemi süreci ve pandemi sonrası dünyada eğitime yönelik değerlendirmeler: Yeni normal ve yeni eğitim paradigması. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi, 6*(3), 112-142. https://dergipark.org.tr/tr/pub/auad/issue/56247/773769

Council of Higher Education. (2020). *Uzaktan eğitime yönelik değerlendirme.* Council of Higher Education. https://www.yok.gov.tr/Sayfalar/Haberler/2020/uzaktan-egitime-yonelik-degerlendirme.aspx (15.01.2021).

Çelik, M., Aslan, Ş. (2012). Mekan tasarımı eğitiminde temel tasarım eğitimi dersi ve dersin izlenebilirliğine yönelik bir yaklaşım. *İÇMEK / İçmimarlık Eğitimi 2. Ulusal Kongresi.* İstanbul, Türkiye, p.54-63.

Dwayne, C. D., & William, M. J. (1999). *The University of Louisville.* University Press of Kentucky.

Erdoğan, İ. C. (2019). *Grafik tasarımda kullanılan görsel göstergelerin incelenmesi: İKSV İstanbul Müzik Festivali afiş örnekleri* [Yüksek Lisans Tezi T.C. İstanbul Arel Üniversitesi].

Gropius, W. (1965). *The new architecture and the Bauhaus.* MIT Press.

Gropius, W. (1968). *Apollo in the democracy: The cultural obligation of the architect.* McGraw-Hill.

İncearık, M. E. (2011). *Grafik tasarım rehberi.* Kodlab Yayın Dağıtım Yazılım Ltd.Şti.

Harasim, L. (1987). Teaching and learning on-line: Issues in computer-mediated graduate courses. *Canadian Journal of Educational Communication*, *16*(2), 117-135.

Karasar, Ş. (2004). Eğitimde yeni iletişim teknolojileri -internet ve sanal yüksek eğitim-. *The Turkish Online Journal of Educational Technology*, *3*(4), 117-125.

Kömürcüoğlu. T. N., Altaş, N. E. (2003). Tasarım sürecinde kavram. *İTÜDERGİSİ Mimarlık, Planlama, Tasarım, 2*(1), 15-26.

Nerdinger, W. (1985). Walter Gropius: The architect Walter Gropius drawings, prints and photographs from Busch-Reisinger Museum, Harvard University Art Museums, Cambridge/Mass. *Bauhaus-archives, Berlin - With complete project catalogue.* Busch-Reisinger Museum.

Ministry of Health. (n.d.). *Covid-19 sözlüğü.* Republic of Türkiye Ministry of Health. https://covid19.saglik.gov.tr/TR-66493/p.html (10.01.2021).

Ocvirk, O., Stinson, R., Wigg, P., Bone, R., Cayton. D. (2015). *Sanatın temelleri: Teori ve uygulama.* Karakalem Kitabevi.

Özol, A. (2012). *Sanat eğitimi ve tasarımda temel değerler.* Pastel Yayıncılık,

Öztuna, H. Y. (2007). *Görsel iletişimde temel tasarım.* Tibyan Yayıncılık.

Reardon, A. P. (2004). *A perceptual basis fort the elements and principles of design* [Doktora Tezi, Eastern Michigan University, USA].

Türk Dil Kurumu (TDK). (n.d.). Withdrawal. In TDK dictionary. https://sozluk.gov.tr (12.04.2021).

Türkmen, A. (2020). Temel tasarımda kavram temsili ve biçim üretimi. *IDA: International Design and Art Journal, 2*(2), 228-247.

Uluoğlu, B. (1990). *Mimari tasarım eğitimi tasarım bağlamında stüdyo eleştirileri* [Doktora Tezi, İstanbul Teknik Üniversitesi].

Williams, R. (2008). *The non-designer's design book: Design and typographic principles for the visual novices.* Pearson Education.

Yılmaz, M. (2009). *Görsel sanatlar eğitiminde uygulamalar*. Gündüz Eğitim ve Yayıncılık.

Figure References

Figure 1: Özsırkıntı Kasap, H., Türkmen, A. (2018). Temel tasarım eğitiminde yüzeyden hacime geçiş çalışmalarının biçim üretimi bağlamında değerlendirilmesi. *(ISAS) 2nd International Symposium on Innovative Approaches in Scientific Studies,* Samsun, Türkiye.

Figure 2: Ching, F. (2014). *Mimarlık: Biçim, mekân ve düzen*. YEM Yayın.

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An experimental research on the impact of spatial configurations of complex hospitals on human wayfinding performances

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**This study is prepared from the thesis titled "Hastanelerde İç Mekan Konfigürasyonunun Yön Bulma Davranışlarına Etkisinin Araştırılması" which was accepted as the Doctorate Thesis of the Department of Architecture at Selçuk University Institute of Science on 2017.

Abstract
This study was carried out to investigate the impact of spatial configurations of a complex hospital plan on individuals' wayfinding performances on the basis of a human cognition theory. 20 participants were sent to two different locations in the hospital (Breast Clinic and X-Ray Clinic). After qualitative data derived from VGA study was analyzed, VGA results were transferred into binominal continuous values for each variable and statistically analyzed by SPSS 24 to come up with quantitative results regarding the wayfinding performances of the participants. As a result, cross-sectional node points were found to be the decision-making points of participants where they mostly stopped to think and lost time and effort. The results also revealed that reference points have strong positive influence on wayfinding performances. This study concludes that wayfinding performances of navigators are supported when there is small gap between the users' existing schemata and new building design. Designing circulation areas in a curvilinear shape allow direct day light to get into the building and that creates wide spectrum of vision rather than vertically designed cross-sectional areas, which create narrower vision of the circulation areas and node points.

Keywords: Cognitive Mapping, Complex Hospital Designs, Space Syntax, Spatial Configurations Wayfinding

Extended Abstract

Introduction: Consideration of the important emphasis the bulk of the literature puts on the context of spatial configuration, human cognition and human-wayfinding lead us to shift our attention on human-wayfinding behavior in complex hospital designs from the same theoretical perspective. There are many reasons for carrying out this research but among many reasons, the first and foremost is that the related literature lacks in explaining how human dimension with its psychological entities are embedded in the field of architecture, and in relation to that, the literature is lacking in the amount of experimental research in explaining how humans are affected by their environment and react accordingly. Designing buildings which keep balance between spatial configurations and human cognition to support wayfinding

practices require excessive knowledge regarding how human possesses and processes knowledge for his/her benefit. This is hugely significant since the extent to which an environment is designed by considering the human dimension, the needs of human wayfinding will be better catered. That is why experiments need to be conducted to understand the psychological contributions to architectural designs. The aim of this research therefore is to gain deeper insight into how people are affected by complex building types and what sort of spatial factors affect their wayfinding behavior in relation to their cognition.

Purpose and scope: This research was designed as a quasi-experimental research supported by qualitative and quantitative research paradigms to bring deeper insight into how individuals find their ways in complex hospital buildings and what factors actually affect the way they navigate through their destinations. Understanding the extent to which users of complex hospital buildings are affected by several exogenous variables required researchers to observe the natural behaviors of participants in their natural settings. For that matter, qualitative aspect of this research becomes crucial. For the quantitative dimension, however; it was tended to fix the standards for the participants of this experiment.

Method: Based on the theoretical framework of the current research, the experiment was designed to gather data from the participants with respect to their wayfinding behaviors and cognitive processes. Participants' navigation strategies were directly observed and data regarding wayfinding behavior was successfully elicited from the verbal reports and live thoughts of navigators. At that point, Arthur and Passini's (1992) suggestion was followed, which points the importance of collecting data from both researchers' and participants' point of views during an ongoing wayfinding task to get a clearer picture of the actual situation. Such an expectation required an experimental procedure in which some critical variables are in need to be observed and controlled directly (Anastasi & Urbina, 1997). A way of capturing verbal inputs, which involves cognitive processes, was to provide participants with opportunities to think aloud as they navigate through the given destination (Barkaoui, 2011: 53). Therefore, GoPro action camera attached to the heads of each participant enabled us to get clear picture regarding their wayfinding strategies and cognitive processes. The experiment was also designed as mixed method approach including both qualitative and quantitative paradigms. Although this research aimed to gather more qualitative data, qualitative approaches were allowed to infer quantitative data to be further analyzed by some statistical procedures. Direct observation results elicited from participants' verbal reports enabled us to deal with behavioral measures such as time, stops, getting lost, distance, way/shortest way, speed, and pause time. The intention in doing so was causally related to the fact that multilevel hospital buildings with complex plans produce inconsistent routes with numerous death-ends, which in turn, affect the wayfinding performance. In this experiment, in this regard, would give an idea about how navigators interact with such environments and how are their wayfinding performances affected by the design elements and complexity of such structures.

Findings and conclusion: In conclusion, findings under the light of discussions and the contributions of the pioneers of the field concluded that wayfinding performances of navigators are supported when there is a small gap between the user's existing schemata and new building design; and when main circulation areas were designed in a curvilinear shape getting direct day light through inside the building, which creates wide spectrum of vision, rather than vertically designed cross-sectional areas, which create narrower vision of the circulation areas and node points. Signage system should be free from too much information and the background color should be emphasizing the written directions with concise information.

Based on the results and discussions rendered from the current study, suggestions for the betterment of designs and suggestions for further research are outlined as a form of guideline and are provided below. The most important element in supporting the wayfinding behaviors (performances) of users is to create consistent circulation areas with smooth cross-sectional node points. Node points, where navigators most frequently stop and need more guide from the environment need to be designed in a more memorable manner. Placing artistic elements around these node points support navigators' wayfinding practices and help them activate their already existing schemata. Natural day light coming through inside of a building and lightening the node points and providing navigators with a vision of outside with big enough windows can be considered as an important factor in positively affecting the wayfinding performances of users. While designing a signage system and directory signboards, some important factors which require attention are that a main directory signboard should be situated just in front of the outpatient entries, and should also maintain consistency throughout the spaces in hospitals in terms of texture, color, type size, frame shape, background color and means and additional signboards should be added around node points, especially at cross-sectional corridors where users mostly get confused and stopped for further decision making.

Keywords: Cognitive Mapping, Complex Hospital Designs, Space Syntax, Spatial Configurations Wayfinding

INTRODUCTION

One of the routines of any daily life experience is navigating and orienting via environments to reach a destination for most people. This daily life routine takes places in many different forms such as driving, walking, and moving in a building. Even though this daily event usually occurs with no or minimal problems, people sometimes experience some serious problems in finding their way to reach the desired destinations, which make people feel disappointed or being lost (Arthur & Passini, 1992; Golledge, 1999; Lynch, 1960; Raubal & Egenhofer, 1998: 897). This act refers to the cognitive and behavioral abilities which individuals use to navigate from one location to another (Palmiero & Piccardi, 2017: 2; Ruotolo et al., 2019: 1085). When a person associates him/herself to a wayfinding task, certain cognitive processes occur. According to (Downs & Stea, 2017), this cognitive process is composed of four important stages. The first stage is to locate himself and his/her target destination points. The second phase is to set up an initial route to get to the target location. The third stage includes peculiarities of the first and the second stages. In the final stage, a person makes some decisions about the route taken by means of some evaluations of the decisions he/she made in the first and the second stages as he/she navigates thorough the desired destination. The final stage, which concludes the wayfinding task, is to remember the whole wayfinding process when a person reaches the desired destination. This natural process has been defined by some other scholars in a similar manner but in different number of stages (Carpman & Grant, 2016: 10; Conroy, 2001; Golledge, 1999: 4).

People avoid getting into such buildings alone. They can otherwise miss important meetings which results with loss of effort and opportunities (Carpman & Grant, 2016). Such problematic situations generally happen in hospitals with complex structures (Ulrich et al., 2008: 65). Hospitals are especially unique for some reasons. They are places where people are in hurry to reach their destinations in the shortest time since they might have to catch up with meetings, appointments and hurry on to find their relatives or doctors with whom they need to get on time. Studies indicate that the way buildings were planned and the way spatial areas were configured have enormous impacts on human cognitive maps (Huelat, 2007; Rooke et al., 2009: 5). Studies also exposed that building plans and spatial configurations guide users to be more confident in wayfinding with less lost frequencies (Huelat, 2007; Rooke et al., 2009: 6). Studies also added that there is a significant relationship between well designed buildings and users' compelling harmony to achieve a more successful wayfinding behavior (Brunyé et al., 2019: 5). The architectural setting and logic of the design a building covers are considered to be the key elements of successful wayfinding. Lawson described this phenomenon as "human language of spaces", and mentioned that such language should be considered as a primary focus of attention and need to be evaluated in depth by architects and researchers from the perspective of human cognition (Lawson, 2007). A group of researchers indicated that wayfinding performances of individuals are quite affected by signage systems that are explicitly available in the environment (Conroy, 2001; Vilar et al., 2012: 1151). Since it is known that people tend to trust the information provided by the signage system. Even though signage system is the first to be considered by way-finders, it does not guarantee good wayfinding in an emergency or when it is urgent to reach a desired destination, especially in complex buildings.

Bringing deeper insight into human-wayfinding behavior requires untying the intriguing relationship between spatial configuration, human cognition, and wayfinding. For that very reason, a considerable body of research has accumulated to unpack the relationships between the so-called variables. For example, a significant group of researchers has put a great emphasis both on the spatial configuration and human cognitive maps, to better understand human wayfinding behavior in relation to human cognition (Downs & Stea, 2017: 16; Kaplan, 1976; Lynch, 1960; Siegel & White, 1975: 12). Cognitive researchers, such as (Downs & Stea, 1977; Kaplan, 1976) claimed that humans first gain cognitive maps of their environments and then store that information and then turn them into a form of structural schemata. Therefore, when a person enters a building or before taking any action to navigate through, he/she first calls information back from these preliminary defined schemata. This clearly underlines the fact that successful human wayfinding is associated with the activation of the already existing schemata of that person by the hand of successful designs and special configurations (Imani & Tabaeian, 2012: 56). It is strongly believed by Hunter that the origin of such behavior roots to a sort of human cognitive exercise, which helps them create information as a tool of wayfinding (Abu-Obeid, 1998: 161; Appleyard, 1970: 113; Gärling & Golledge, 1989: 206; Hunter, 2010; Lynch, 1960; O'Neill, 1991b, 1991a; Passini, 1980: 24; Weisman, 1981: 190).

Many research studies have put effort to understand how human wayfinding behavior functions in real life situations through several experimental studies. For instance, a group of researchers considered human-way finding in conjunction with environmental dimension (Carpman & Grant, 2016; Huelat, 2004; Rooke et al., 2010: 3), while some other group of researchers continued their studies in close relation with human cognition dimension (Golledge, 1999; Haq & Zimring 2003: 137; Hölscher et al., 2005: 823; Raubal, 2001: 366). When recent studies concerning wayfinding were carefully evaluated, it was found out that suggestions for the solutions regarding wayfinding issues were all based on cognitive psychological discipline or environmental psychology (Holst, 2015; Payne et al., 2015: 265; Vogels, 2012; Yang et al., 2018: 22).

RESEARCH FOCUS

Consideration the significant emphasis the bulk of the literature puts on the context of spatial configuration, human cognition and human-wayfinding lead to shift attention on human-wayfinding behavior in complex hospital designs from the same theoretical perspective. There are many reasons for carrying out this research but among many reasons, the first and foremost is that the related literature lacks in explaining how human dimension with its psychological entities are embedded in the field of architecture, and in relation to that, the literature is lacking in the amount of experimental research in explaining how humans are affected by their environment and react accordingly. Designing buildings which keep balance between spatial configurations and human cognition to support wayfinding practices require excessive knowledge regarding how human possesses and processes knowledge for his/her benefit. This is hugely significant since the extent to which an environment is designed by considering the human dimension, the needs of human wayfinding will be better catered. That is why experiments need to be conducted to understand the psychological contributions to architectural designs.

Hospitals are not only crowded places but also the most nerve-driving places, which might possibly create a negative impact on human wayfinding behaviors. For this reason, architectural design features and interior spatial configurations of complex hospital buildings draw attention to their impact on human wayfinding behaviors in relation to human cognition. The aim of this research therefore is to gain deeper insight into how people are affected by complex building types and what sort of spatial factors affect their wayfinding behavior in relation to their cognition.

METHODOLOGY

Research Design

This research was designed in 2017 as a quasi-experimental research supported by qualitative and quantitative research paradigms to bring deeper insight into how individuals find their ways in complex hospital buildings and what factors actually affect the way they navigate through their destinations. Understanding the extent to which users of complex hospital buildings are affected by several exogenous variables required researchers to observe the natural behaviors of participants in their natural settings. For that matter, qualitative aspect of this research becomes crucial. For the quantitative dimension, however; it was tended to fix the standards for the participants of this experiment.

Research questions

To achieve the aim of this study, following research questions have guided the study:

Q1: How do the decision points in the targeted hospital effect the wayfinding behavior of the participants in given wayfinding tasks?

Q2: How do design elements in the defined circulation areas in the targeted hospital affect the wayfinding behavior of the participants in given wayfinding tasks?

Q3: How does signage system in the targeted hospital affect the wayfinding behaviors of the participants in given wayfinding tasks?

Participants

Participants were 20 pre-license students studying in the Aydın Adnan Menderes University between the age range of 18-24 and had no previous experiences of the hospital and were composed of 10 males and 10 females. The reason for choosing young people for this experiment is related to the fact that the difficulties they will experience despite their young ages will expose the actual wayfinding difficulties regarding the building. They have been informed about the research, ethical aspects, and their responsibilities as researcher participants, and they have all accepted to voluntarily contribute to the study by signing participant consent forms. Participants were not allowed to use the elevators and not allowed to ask for directions throughout their wayfinding tasks.

Research Setting

The hospital selected for this research was chosen according to some limitations and perspectives. First, the research team paid attention to concentrate on complex hospital buildings. A complex building design is described as follows: (a) including at least two different plan types in terms of hospital scale and architectural type; (b) having over 300 beds capacity; and (c) composed of multilevel layers. In addition to complexity, the other criterion was the age of the building. This research concentrated on hospitals younger than 10 years old. Outpatient space configuration and position and the willingness of hospitals to support the study were some other factors that was considered in selecting the hospital for the study.

When all the hospitals in the broad area of Aegean region in Turkey were evaluated, the results showed up with one national hospital in Aydin region, which accepted to contribute to this experimental study. The hospital is called Nazilli National Hospital (NNH). The basic premise behind selecting this hospital for this research was to reach more generalizable results of analyses regarding to the spatial configuration and other statistical analyses as well as qualitative responses recorded. Moreover, the managers and hospital head were utmost positive and encouraging in having us to convey this research in their hospital. After the informed consent forms were signed and research policy limitations including codes of conduct, the research team arranged several meetings with some gate keepers in the hospital to get detailed information about the plans and other necessary materials for this research. Invaluable information was collected on the research setting which highly supported this research. For better understanding, thick descriptions regarding the hospital building and its environment were provided in the following section.

Nazilli National Hospital (NNH) with its 73,156 m^2 covered area serving with 481 bed capacities is situated in Nazilli district (connected to the city of Aydin) and consists of the combination of 11 structures. The central core block is surrounded by 10 additional blocks and has nine levels. But three of the nine surrounding blocks have eight levels, four of them have five levels, two of them have six levels and one of them has seven levels. The combination of such a variety of structures with different number of levels turns the building into an even more complex structure. The central core block of the NNH is designed with spiral circulation schema. Other connected blocks; however, are designed by rectangular plan schema.

Experimental Procedures

Based on the theoretical framework of the current research, the experiment was designed to gather data from the participants with respect to their wayfinding behaviors and cognitive processes. Participants' navigation strategies were directly observed and data regarding their wayfinding behavior was successfully elicited from the verbal reports and live thoughts of navigators. At that point, Arthur and Passini's (1992) suggestion was followed, which emphasizes the importance of collecting data from both researchers' and participants' point of views during an ongoing wayfinding task to get a clearer picture of the actual situation. Such an expectation required an experimental procedure in which some critical variables are in need to be observed and controlled directly (Anastasi & Urbina, 1997). A way of capturing verbal inputs, which involves cognitive processes, was to provide participants with opportunities to think aloud as they navigate through the given destination (Barkaoui, 2011: 53). Therefore, GoPro action camera attached to the heads of each participant enabled us to get clear picture regarding their wayfinding strategies and cognitive processes. The experiment was also designed with a mixed method approach including both qualitative and quantitative paradigms. Although this research aimed to gather more qualitative data, the way the research was employed qualitative approaches allowed to infer quantitative data to be further analyzed by some statistical procedures. Direct observation

results elicited from participants' verbal reports enabled us to deal with behavioral measures such as time, stops, getting lost, distance, way/shortest way, speed, and pause time. The intention in doing so was causally related to the fact that multilevel hospital buildings with complex plans produce inconsistent routes with numerous death-ends, which in turn, affect the wayfinding performance. The experiment, in this regard, would give an idea about how navigators interact with such an environment and how their wayfinding performances are affected by design elements and complexity of such structures.

Data Collection and Analyses Procedures

Study 1: Visibility Graph Analysis (VGA)

First, by the help of Depth Map Software, the plans of the hospital building were analyzed on the basis of the space syntax theory in order to find out the most challenging routes for users in terms of connectivity, integration and step-depth. The results for those parameters were shown in illustrations for both base level and level -1 respectively (see Figure 1). Route tasks were determined by researchers' direct observations of the hospital building at different times of a day and the results have been gathered from space syntax analyses.
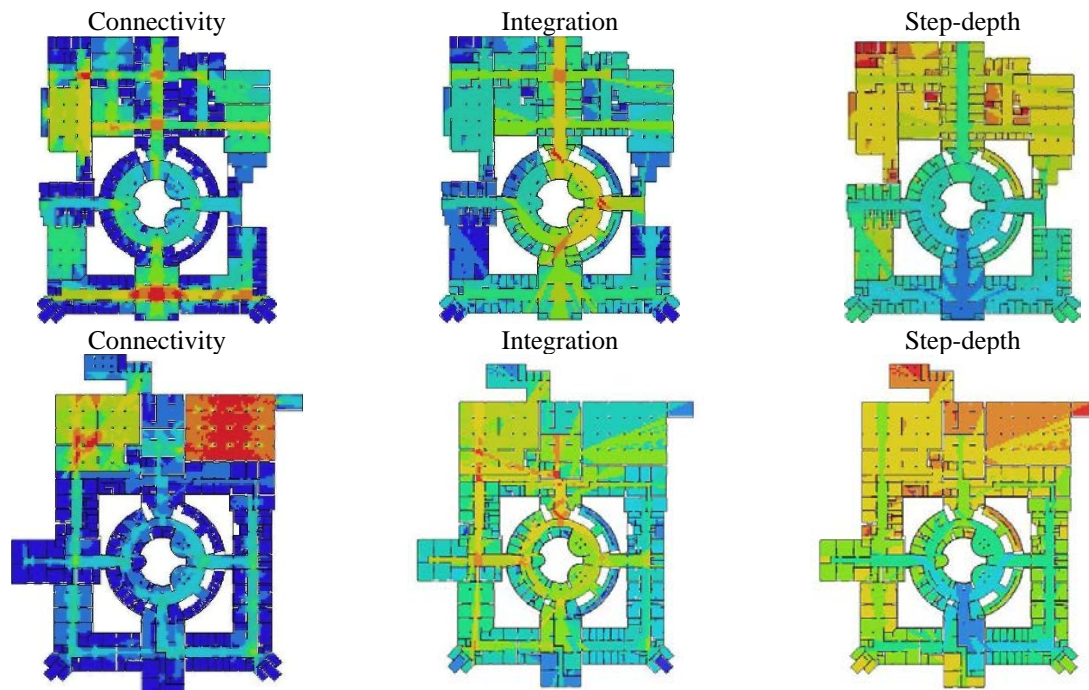
Figure 1. The graphical representation of NNH regarding base level and Level-1 in terms of connectivity, integration and step-depth

This preliminary study guided to determine the zone of proximal analysis within which the distance between actual and potential route tasks were analyzed. Occasionally, such results might have been negotiable unless otherwise experts would have provided opinions on the issue. For that very reason, a group of four experts voluntarily interpreted the observation results and results derived from space syntax analysis to provide their opinions for the optimum route tasks that will be given to participants as directions and destinations. The route task decided for the experiment is shown in the related illustration for NNH.

Base Floor Plan   -1 Floor Plan

1: Outpatient Entry 2: Breast Clinic Area   3: X-Ray Area
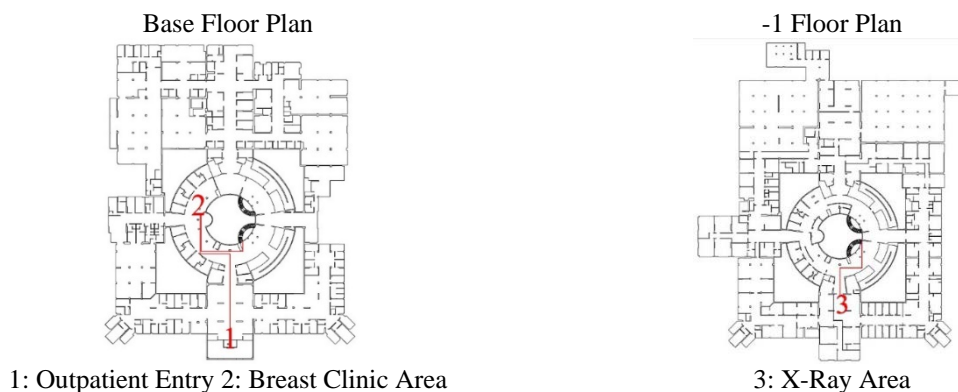
Figure 2. Specified route-tasks for both Base Floor and Floor-1

The second attempt was to arrange several meetings with participants to give them some valuable information about the research, however; no information was given regarding which hospital they would be enrolled with. Though, they were informed of their roles and responsibilities. According to the given instructions, they were informed that they will be given a specific route task that they need to accomplish.

Participants were also informed that a GoPro camera will be mounted on their heads which will be recording sound and vision at the same time. The most important part of those briefings was that each participant was clearly instructed on their main role of thinking aloud all the time as they navigate through the specified destinations. The route task included two destination points. When they reached the first destination point, they were expected to get an envelope from a research agent. This envelope included information about the second route task that they need to complete. Participants were also requested not to talk to anyone or request help from anyone unless otherwise it is quite necessary and to use stairs instead of elevators.

Study 2: Wayfinding Performance Measures

Passini, highlighted the necessity of investigating the wayfinding processes for better understanding the wayfinding issues (1996: 321). Researchers, considering this view of Passini, developed a strategy to assess the wayfinding processes of navigators (Brösamle & Hölscher, 2007; Hölscher et al., 2006, 2004: 15). They suggested assessing the wayfinding processes through wayfinding measures. Data with respect to those six wayfinding measures were derived from qualitative think aloud speech analysis and GoPro camera recordings. And then they were transferred into quantitative data for calculating performance measures such as time (sec.), stops (n), getting lost (n), distance (meter), distshort (distance/shortest way) (meter) and speed (m/sec). However, for the current research, one more variable was added and it is called stop times (sec.). It was believed that stop times would give better insights into which stopping points make navigators loose more time for their decision-making process and to find out the characteristics of these areas and their relation to navigators' cognition in terms of those areas' spatial configurations.

In addition to all, those specified performance measures helped us to better understand the most complicated areas; the factors causing complexity; the routes participants got lost most and why they were lost in these routes; the amount of unnecessary paths taken by the participants in contrast to the shortest path; the environmental factors that guided participants most as they have navigated through; the areas where participants had to ask for directions; which key elements helped them to make correct decisions and take the correct routes; the effects of the circulation areas' installation on the participants' navigation manner; how the signage systems are affecting participants' wayfinding behaviors; and the influence of environmental factors (e.g. color, lightening, artistic elements and etc.) on participants' wayfinding behaviors.

Statistical Procedures

The qualitative data obtained from the GoPro action camera and the data regarding to hospital plans derived from Depth Map in terms of connectivity, integration and step-depth were processed as nominal values to be further analyzed by necessary statistical calculations. In addition, as representative documentation of participants' performance measurers, additional data from those defined seven performance measures with

respect to the hospital are coded as continuous variables and passed into the SPSS 24 statistical analysis software. All statistical analyses covered Space Syntax Variables and wayfinding behavior performance variables and interpretations were based on the results derived from cross-sectional probability analyses such as Pearson Correlation Coefficient levels with their significances, regression analyses and t-tests. It should be said at this point that before proceeding with any of these parametric tests, necessary assumptions were tested as a priority and reported in the results section of this article.

RESULTS OF ANALYSIS

Results Regarding to Study 1: VGA Analyses

As a result of the VGA analyses, the first finding emerged was that participants, as they were approaching to their first defined destination of breast clinic from the entry, tried to find a directory signboard, but they could not find the directory signboard located at the entry. Repeatedly watched VGA records revealed that the directory signboard showing the places of various clinic areas was located in the wind protector apron area in the entry and participants could not see them since they looked it after they have passed the apron area.

Although the main corridors were so crowded during the experiment day, participants seemed to be moving smoothly and seemed to be relaxed as they navigate. Main corridors being designed wide enough (min. 450 cm wide) helped participants to easily move along with the corridors towards their destinations. Because clinic areas were located around the spiral structure of the core center point of the hospital, participants found their destinations with less effort. Another factor was the direct day light entry into the building which helped with vision and affected participants' navigation positively. When the GoPro recordings were carefully watched, it was realized that the clinical areas in the node points of corridors happened to be more visible and were found easily by the participants. Participants also did not happen to ask for any help from other individuals for direction (Figure 3).
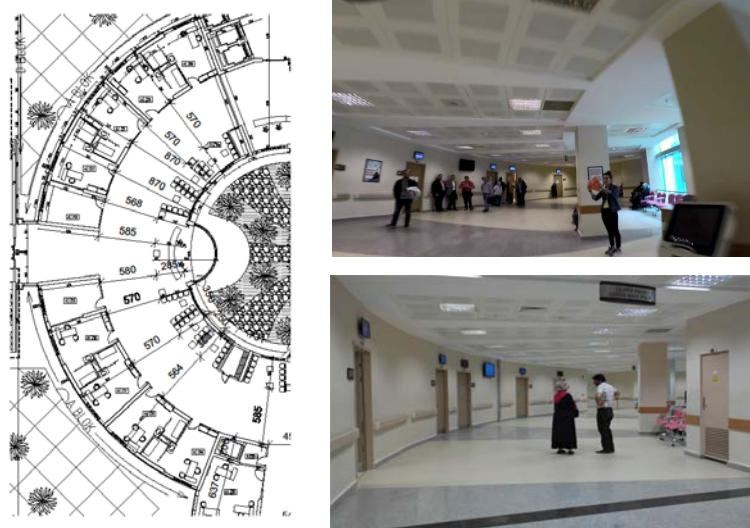
Figure 3. Outpatient breast clinical area

For the second route task, which directed participants from breast clinic to x-ray area located at the floor -1, the first attempt of all participants was to look for a directory signboard. It was found from the think aloud practice and voice recordings of some participants that they had previous experiences regarding where x-ray areas are generally located in hospitals, so they directly approached toward the stairs. The stairs designed in a spiral form and situated at the center core point of the hospital were so visible that participants found the area in question without any hesitation (Figure 4).
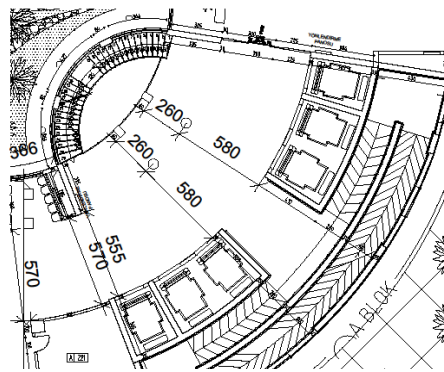
Figure 4. The spiral positioning and design of central core block of the NNH

Some other participants found the directory signboard, which was directing users to go straight but they misinterpreted the go straight sign (↑) and they approached towards upstairs, which made them loose time and effort.

From the recordings it was clear that natural daylight coming through the main circulation area of the floor -1 helped participants remember the area. The node points of circulation areas and long corridor areas were found to be the main areas where participants stopped to think. Participants were mostly nervous when they have arrived to narrow corridors which do not get direct day light (Figure 5). Because some corridors did not have any design elements in their node points, navigators happened to visit same corridors and stopped at same points for several times. Another important finding was that the corridor walls were painted to the same color and there was no artistic element around or on the walls to make users remember and distinguish areas from one another. Likewise, participants had troubles in finding their ways and they got confused so they could not find the stairs to floor -1 in the second mission. When participants were in their way back to the starting point they have come across a peddler and they considered the peddler as a reference point.
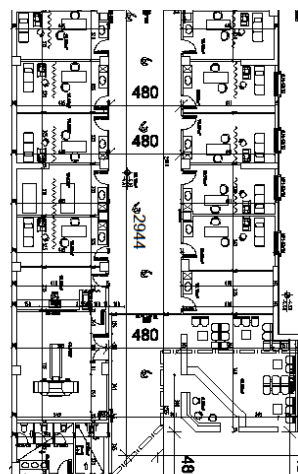
Figure 5. The corridor and circulation area of X-Ray Clinic

Following the participants' completions of their missions, they have been individually interviewed and have been asked for the most important factor that they have experienced and helped them find their ways just after they have completed their missions. All the participants responded to this question as "the direct daylight coming through inside the building and the views of outside of the building". For the second question related

to the factor that made them have trouble in their wayfinding tasks, all of them responded as "'the situation of the walls". They said that 'the corridor walls are identical everywhere in the hospital which made them to get confused of their location and affected their navigation negatively'. They also added that the informative explanations on the signboards were so crowded that they could not read clearly and created confusion. This result was consistent with the GoPro recordings and most of the participants complained about the excessive information put on each signboard in the hospital. One other factor, which made participants think the signboards were incomprehensible, related to the shiny background color of the signboards that reflected daylight and reduced the readability. Here, it was noticed that an important irony between the advantage (wayfinding) and disadvantage (readability of the signboards) caused by the direct day light. Furthermore, this ironic situation was mentioned by some of the participants during their route task missions.

Results Regarding to Study 2: Wayfinding Performance Measures
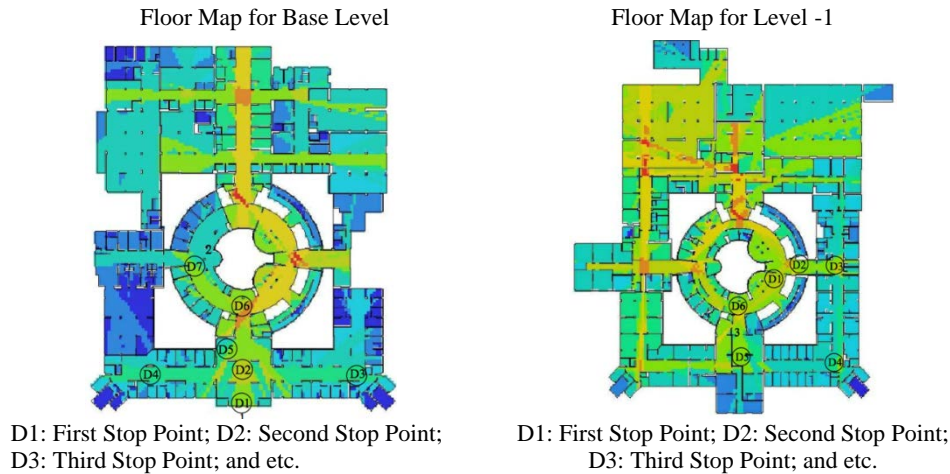
The first set of findings with reference to the wayfinding performances of the participants were related to time (the total duration of route task), stops (how many times participants stopped to think or to make decisions), stop times (time spent during each stop), lost (how many times participants deviated from the actual route), distance (the length used to reach the destination), distshort (the distance between actual and optimum routes) and speed (distance divided by time). The mean values and standard deviations brought out from 20 participants on the back of the given tasks analogous to the defined wayfinding performance measures are shown in the related table (see Table 1) below.

Table 1. Descriptive statistics regarding participants' performance parameters

	N	Minimum	Maximum	Mean	Std. Deviation
Base Floor Time (seconds)	20	35	248	95,50	48,329
Floor -1 Time (seconds)	20	54	627	305,65	172,042
Base Floor Stops (n)	20	1	6	1,75	1,293
Floor -1 Stops (n)	20	1	12	4,90	2,864
Base Floor Stop Times (seconds)	20	2	31	5,20	6,518
Floor -1 Stop Times (seconds)	20	2	59	22,05	15,517
Base Floor Lost (n)	20	0	3	0,35	,813
Floor -1 Lost (n)	20	0	10	3,05	3,316
Base Floor Distance (meter)	20	66,99	292,07	85,8380	51,48912
Floor -1 Distance (meter)	20	86,42	496,75	242,6845	137,55983
Base floor Distshort (meter)	20	1,00	4,35	1,2805	,76644
Floor -1 Distshort (meter)	20	1,00	5,74	2,8040	1,59008
Base Floor Speed (meter/seconds)	20	27,01	191,40	92,1150	40,00815
Floor -1 Speed (meter/seconds	20	19,33	176,07	80,5555	30,25933

Results derived from VGA observation analyses in terms of the stopping points and the characteristic profiles of those points in terms of integrity were visualized for better understanding (Figure 6 for base level). By evaluating Table 1, it can be seen that the standard deviations related to means of each variable were low and the means are consistently high. The means and standard deviations for the second route task concerning the level -1 are shown in the related table (see Table 1). As a result of observations, it was realized that participants most frequently stopped at the node points situated at the beginning of corridor areas. For better visualization of this result, a plan of the hospital covering the results of wayfinding performances were prepared in relation to the integration feature of level -1 (Figure 6 for level -1).

Floor Map for Base Level   Floor Map for Level -1

D1: First Stop Point; D2: Second Stop Point;   D1: First Stop Point; D2: Second Stop Point;
D3: Third Stop Point; and etc.   D3: Third Stop Point; and etc.

Figure 6. The representative image of the relationship between the degree of integration and stopping frequencies of participants

To analyze the spatial configurations of maps of base level and floor -1 and their spatial interrelationships, Depth-map software was used. The analysis of space syntax included connectivity, integration, step-depth, and intelligibility characteristics. As a result of analyses regarding to the base level of hospital, the calculated mean values with respect to space syntax parameters are respectively 267.44 for connectivity, 2.66 for integration and 4.26 for step-depth (Table 2).

Further investigation showed that the color scale in the plans reduced from red to blue as space depth got lower values. When those parameters were evaluated together with VGA findings, it was found that wayfinding performances of participants were positively affected in the areas where connectivity and integration values are found to be high and step-depth values are found to be low (Figure 6). As it can be seen in Figure 6, the highest connectivity values were recorded at the cross-section node points of corridors. When the general structure of the hospital plan was treated, the highest values regarding integration facet was found to be the node points just as it was in the case of connectivity facet. On the other hand, it is noticeable that the integration values are getting lower and step-depth values are getting higher as approaching to the end points of corridor areas. Naturally, step-depth values, which are in contrast relationship with integration, are getting lower in the areas were integration values are increasing.

As a result of the correlation and regression analyses including connectivity and integration variables, established as predictive variables, helped to predict the intelligibility of the hospital area. The regression result for the base level revealed the total explained variance as $R^2=0.23$. Therefore, it is understood that the intelligibility of the base level of the NNH is low since the calculations have only explained 23% of the total variance. The results derived from integration graphic and observation results, which showed the points where users benefit for navigation, were compared to graphical side marks and both graphics were shown on the plan (Figure 6). According to those analyses, the places where participants have stopped, matched with the places where integration values were found to be high. For the floor -1, mean values calculated for space syntax parameters are 303.63, 3.099 and 4.87 respectively for connectivity, integration, and step-depth (Table 2). When those numbers are evaluated, it is obvious that findings regarding to integration and step-depth are quite like those of base level of the NNH (Table 2).

Table 2. Base and -1. VGA values of floors

VGA values	Minimum	Maximum	Average	Std. Deviation
Base floor connectivity	3	834	267.443	29.51
Base floor integration	1.613	4.45124	2.65694	1.03
Base floor step depth	0	8	4.25774	1.78
Floor -1 connectivity	3	1072	303.63	33.4
Floor -1 integration	1.613	4.87225	3.09937	1.10
Floor -1 step depth	0	7	4.2429	1.57

For connectivity, the plan generally showed up with blue color and main circulation areas were shown to be even in lighter colors. The best area, in terms of connectivity and integration, was found to be the physical rehabilitation center in comparison to other areas of the building (Figure 4).

Intelligibility value for the floor -1 was calculated to be $R^2=0.11$. Since the explained variance ratio is 11%, it can be indicated that the intelligibility facet is as low as the base level of the NNH.

The relationship between spatial configuration variables and wayfinding performance parameters were explored for both base floor and floor -1 by calculating the Pearson Moments Correlation Co-efficiency. The results of analysis yielded low and negative correlation loads and showed no statistically significant correlations between variables.

It is found out that the higher the connectivity values are, the higher the wayfinding performance measures of time, pause time, getting lost time, distance and extra road taken become. Participants mostly stopped at the circulation areas where integration values found to be high. On the other hand, increment in the integration values, which is in negative correlation with depth values, make the same wayfinding performance measures decrease in values. The correlation co-efficiencies between step depth and wayfinding performances ranged between r=0.01 and r=0.26 (Table 3).

Table 3. Correlation coefficients between performance parameters and space syntax parameters regarding base level

Wayfinding Performance		Connectivity	Integration	Step depth
Time	Pearson Correlation	-,288	-,052	,142
	Sig. (2-tailed)	,218	,828	,551
	N	20	20	20
Stops	Pearson Correlation	,102	,243	-,259
	Sig. (2-tailed)	,669	,301	,270
	N	20	20	20
Stop Times	Pearson Correlation	-,057	,131	-,225
	Sig. (2-tailed)	,810	,583	,341
	N	20	20	20
Lost	Pearson Correlation	-,215	-,001	,019
	Sig. (2-tailed)	,362	,998	,937
	N	20	20	20
Distance	Pearson Correlation	-,174	-,068	,147
	Sig. (2-tailed)	,464	,776	,538
	N	20	20	20
Distshort	Pearson Correlation	-,174	-,068	,146
	Sig. (2-tailed)	,464	,776	,539
	N	20	20	20
Speed	Pearson Correlation	,291	,140	-,125
	Sig. (2-tailed)	,213	,555	,598
	N	20	20	20

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

For floor level -1, like in the case of base level, there were little non-significant and negative relationships between connectivity integration and wayfinding behavior performances of participants. The relationship between step-depth wayfinding performances was found to be either negative or truly little correlation co-efficiency with very little loadings (Table 4). Like findings for base floor, the circulation areas with high integration values, which are also considered as node points, were the areas where participants stopped for thinking and decision making.

Table 4. Correlation coefficients between performance parameters and space syntax parameters regarding -1 level

	Wayfinding Performance	Connectivity	Integration	Step depth
	Pearson Correlation	-,090	-,054	,332
Time	Sig. (2-tailed)	,707	,822	,153
	N	20	20	20
	Pearson Correlation	-,133	,193	,166
Stops	Sig. (2-tailed)	,576	,416	,485
	N	20	20	20
	Pearson Correlation	-,325	,210	,100
Stop Times	Sig. (2-tailed)	,163	,375	,673
	N	20	20	20
	Pearson Correlation	-,265	,130	,253
Lost	Sig. (2-tailed)	,259	,585	,281
	N	20	20	20
	Pearson Correlation	-,143	-,053	,372
Distance	Sig. (2-tailed)	,548	,826	,106
	N	20	20	20
	Pearson Correlation	-,143	-,053	,372
Distshort	Sig. (2-tailed)	,548	,825	,106
	N	20	20	20
	Pearson Correlation	-,031	,010	,030
Speed	Sig. (2-tailed)	,897	,967	,899
	N	20	20	20

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

DISCUSSION AND CONCLUSIONS

The interaction and communication between human and spaces help people design spaces and consequently lead spaces affect human behavior (Zheng, 2012: 442). Architects create buildings, design environments, and give their souls to those buildings. And the designed environments tend to manage human behavior. In other words, the way the buildings are designed, the way the environments have been shaped, the way the buildings are connected to the outside world and the way the surface structures of buildings have been characterized, have significant positive or negative influences on the behaviors of people with respect to the interactional actions they have encountered with. In this regard, the connection quality between spatial configurations of buildings and human behavior are associated with the design quality of buildings (Dalton et al., 2019; Ulrich et al., 2019: 2). Therefore, this study, which attempted to figure out the effects of complex hospital buildings on human wayfinding performances by considering the psychological cognitive perspective, revealed that individuals tend to use their already existing schemata and try to connect it with the structure of the new environment to make sense out of it. If the gap between existing schemata and new building structure is big, individuals experience more trouble in finding their ways comfortably regarding to insufficient cognitive mapping required for effective navigation. This finding of this study is consistent with numerous research (Carpman & Grant, 2016; Huelat, 2007; Rooke et al., 2009: 15).

Other key points open to discussion are the reference points and the number of stimulating sources of information. Participants who deviated from their correct routes complained about the amount of information written on signboards. In addition, it was noticed from the recorded journeys that those participants were also affected by some unnecessary stimulating sources of information such as electronic boards situated nearby the actual signboards. Huelat (2007) supported this finding by indicating that unnecessary use of information causes confusion and negatively affects the wayfinding performances of users. Signboards and directories should play the role of a bridge between preliminary defined node points and main destination areas, and

function in the way of directing users to another node point (Carpman, 1991: 104; Haq & Zimring, 2003: 135). Ruddle and Peruch (2004: 301) supported that a hospital building which is architecturally well designed with poorly designed signage system does not have any positive effect on human wayfinding behaviors. Reference points, on the other hand, have strong influence on wayfinding performances. It was found out from the recordings that all the participants noticed the peddler and used it as a reference point and an important guide element in their turns. Reference points and adding artistic elements around the node points also helped navigability in advance (Garip, 2003; Pati et al., 2015: 45). Likewise, the peddler played the same role in this experiment. Therefore, in order to denote circulation areas and node points with unnecessary information, designers should pay more attention on denoting those areas with more art elements which support memorization and establishing more comprehensible output from their cognitive maps (Denis, 2017).

In conclusion, when rendered up the qualitative and quantitative findings under the light of discussions and the contributions of the pioneers of the field, it can be concluded that wayfinding performances of navigators are supported when there is a small gap between the users' existing schemata and new building designs; and when main circulation areas were designed in a curvilinear shape getting direct day light through inside the building, which creates wide spectrum of vision, rather than vertically designed cross-sectional areas, which create narrower vision of the circulation areas and node points. Signage system should be free from excessive information and the background color should be emphasizing the written directions with concise information.

IMPLICATIONS FOR DESIGNERS

Based on the results and discussions rendered from the current study, suggestions for the betterment of designs and suggestions for further researches are outlined as a form of guideline as provided below:

- The most important element in supporting the wayfinding behaviors (performances) of users is to create consistent circulation areas with smooth cross-sectional node points.
- Crossing points of corridors are important in wayfinding because these points are found to be the decision-making points. For this reason, node points, where navigators most frequently stop and need more guide from the environment need to be designed in a more memorable manner.
- Placing artistic elements around these node points support navigators' wayfinding practices and help them activate their already existing schemata.
- Natural day light coming through inside of a building and lightening the node points and providing navigators with a vision of outside with big enough windows can be considered as an important factor in positively affecting the wayfinding performances of users.
- In order to reach a desired destination, navigators should use a direct path with less steps instead of passing by another connecting route, which will reduce step-depth and create a more comfortable pathway.
- In order to design main circulation areas with narrow connecting points to other areas in a hospital building, designers should go for wide spaces connecting main circulation areas to other areas in a building, because; having wider vision on a both horizontal and vertical spectrum will enable navigators to store specific information regarding an environment.
- While designing signage systems and directory signboards, special attention should be paid to these factors: the main directory signboard should be situated just in front of the outpatient entries, and throughout the spaces in hospitals in terms of texture, color, type size, frame shape, background color and means consistency should be maintained. Furthermore, additional signboards should be added around node points, especially at cross-sectional corridors where users mostly get confused and stopped for further decision making.

Authors' Contributions

The authors contributed equally to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

This article has been completed by all the authors upon their agreements. We as the authors of this article declare that this manuscript has not been sent to any other outlet for consideration of publication and that research has been carried out under the necessary ethical considerations. Authors, in this regard, declare that there is no conflict of interest and that no funding was received from any institutions. No ethical comity agreement decision was necessary for this study.

REFERENCES

Abu-Obeid, N. (1998). Abstract and scenographic imagery: The effect of environmental form on wayfinding. *Journal of Environmental Psychology*, *18*(2), 159-173.

Anastasi, A., & Urbina, S. (1997). *Psychological testing*. Prentice Hall/Pearson Education.

Appleyard, D. (1970). Styles and methods of structuring a city. *Environment and Behavior*, *2*(1), 100-117.

Arthur, P., & Passini, R. (1992). *Wayfinding: People, signs, and architecture*. McGraw-Hill.

Barkaoui, K. (2011). Think-aloud protocols in research on essay rating: An empirical study of their veridicality and reactivity. *Language Testing*, *28*(1), 51-75.

Brösamle, M., & Hölscher, C. (2007). Architects seeing through the eyes of building users – A qualitative analysis of design cases. In T. Barkowsky, Z. Bilda, C. Hölscher, G. Vrachliotis (Eds.). *Spatial cognition in architectural design.* Conference on Spatial Information Theory (COSIT'07), Melbourne, Australia.

Brunyé, T. T., Martis, S. B., Hawes, B., & Taylor, H. A. (2019). Risk-taking during wayfinding is modulated by external stressors and personality traits. *Spatial Cognition & Computation*, *19*(4), 283-308. https://doi.org/10.1080/13875868.2019.1633540

Carpman, J. R. (1991). Creating hospitals where people can find their way (Plant Technology and Safety Management Series, No. 1). *Oakbrook Terrace, IL: Joint Commission on Accreditation of Healthcare Organizations*, *5*, 101-108.

Carpman, J. R., & Grant, M. A. (2016). *Design that cares: Planning health facilities for patients and visitors* (Vol. 142). John Wiley & Sons.

Conroy, R. (2001). *Navigation in immersive virtual environments* [Doctor of Philosophy Thesis, University of London, The Faculty of The Built Environment, Department of Architecture, England].

Dalton, R. C., Hölscher, C., & Montello, D. R. (2019). Wayfinding as a social activity. *Frontiers in Psychology*, *10*, Article 142. https://doi.org/10.3389/fpsyg.2019.00142

Denis, M. (2017). *Space and spatial cognition: A multidisciplinary perspective*. Routledge.

Downs, R. M., & Stea, D. (1977). *Maps in minds: Reflections on cognitive mapping*. HarperCollins Publishers.

Downs, R. M., & Stea, D. (2017). *Image and environment: Cognitive mapping and spatial behavior*. Transaction Publishers.

Garip, E. (2003). *Mimari mekanlarda içeride olma deneyimi: Yön bulma ve oryantasyon* [İstanbul Technical University, Institute of Science, Turkey].

Gärling, T., & Golledge, R. G. (1989). Environmental perception and cognition. In *Advance in Environment, Behavior, and Design* (pp. 203-236). Springer.

Golledge, R. G. (1999). *Wayfinding behavior: Cognitive mapping and other spatial processes*. JHU press.

Haq, S., & Zimring, C. (2003). Just down the road a piece: The development of topological knowledge of building layouts. *Environment and Behavior*, *35*(1), 132-160.

Hölscher, C., Meilinger, T., Vrachliotis, G., Brösamle, M., & Knauff, M. (2004). Finding the way inside: Linking architectural design analysis and cognitive processes. *International Conference on Spatial Cognition*, 1-23.

Hölscher, C., Meilinger, T., Vrachliotis, G., Brösamle, M., & Knauff, M. (2006). Up the down staircase: Wayfinding strategies in multi-level buildings. *Journal of Environmental Psychology*, *26*(4), 284-299.

Hölscher, C., Meilinger, T., Vrachliotis, G., Knauff, M., & Van Nes, A. (2005). The floor strategy: Wayfinding cognition in a multi-level building. *Proceedings of the 5th International Space Syntax Symposium*, *2*, 823-824.

Holst, M. K. (2015). *Optimal hospital layout design* [Doctor of Philosophy Thesis, Aalborg University, Faculty of Engineering and Science, Denmark].

Huelat, B. J. (2004, May 31). The elements of a caring environment-wayfinding. *Healthcare Design.* https://healthcaredesignmagazine.com/architecture/elements-caring-environment/

Huelat, B. J. (2007). *Wayfinding: Design for understanding*. The Center for Health Design.

Hunter, S. (2010). *Spatial orientation, environmental perception and wayfinding.* Center for Inclusive Design and Environmental Access.

Imani, F., & Tabaeian, M. (2012). Recreating mental image with the aid of cognitive maps and its role in environmental perception. *Procedia-Social and Behavioral Sciences*, *32*, 53-62.

Kaplan, S. (1976). Adaptation, structure and knowledge In G. T. Moore and R. G. Golledge (Eds.). *Environmental knowing: theories, research, and methods* (pp. 32-45). Dowden, Hutchinson and Ross.

Lawson, B. (2007). *Language of space*. Routledge.

Lynch, K. (1960). *The image of the city* (Vol. 11). MIT press.

O'Neill, M. J. (1991a). Effects of signage and floor plan configuration on wayfinding accuracy. *Environment and Behavior*, *23*(5), 553-574.

O'Neill, M. J. (1991b). Evaluation of a conceptual model of architectural legibility. *Environment and Behavior*, *23*(3), 259-284.

Palmiero, M., & Piccardi, L. (2017). The role of emotional landmarks on topographical memory. *Frontiers in Psychology*, *8*, 763, 1-8.

Passini, R. (1980). Wayfinding: A conceptual framework. *Man-Environment Systems*, *10*, 22-30.

Passini, R. (1996). Wayfinding design: logic, application and some thoughts on universality. *Design Studies*, *17*(3), 319-331.

Pati, D., Harvey Jr, T. E., Willis, D. A., & Pati, S. (2015). Identifying elements of the health care environment that contribute to wayfinding. *HERD: Health Environments Research & Design Journal*, *8*(3), 44-67.

Payne, S. R., Mackrill, J., Cain, R., Strelitz, J., & Gate, L. (2015). Developing interior design briefs for health-care and well-being centres through public participation. *Architectural Engineering and Design Management*, *11*(4), 264-279.

Raubal, M. (2001). Human wayfinding in unfamiliar buildings: a simulation with a cognizing agent. *Cognitive Processing*, *2*(3), 363-388.

Raubal, M., & Egenhofer, M. J. (1998). Comparing the complexity of wayfinding tasks in built environments. *Environment and Planning B: Planning and Design*, *25*(6), 895-913.

Rooke, C. N., Koskela, L. J., & Tzortzopoulos, P. (2010). Achieving a lean wayfinding system in complex hospital environments: Design and through-life management. *Proceedings of the 18th Annual Conference of the International Group for Lean Construction*, 233-242.

Rooke, C. N., Tzortzopoulos, P., Koskela, L., & Rooke, J. (2009). Wayfinding: Embedding knowledge in hospital environments. *HaCIRIC International Conference 2009 - Improving healthcare infrastructures through innovation,* 2-3rd April 2009, Brighton.

Ruddle, R. A., & Péruch, P. (2004). Effects of proprioceptive feedback and environmental characteristics on spatial learning in virtual environments. *International Journal of Human-Computer Studies*, *60*(3), 299-326.

Ruotolo, F., Claessen, M. H. G., & van der Ham, I. J. M. (2019). Putting emotions in routes: the influence of emotionally laden landmarks on spatial memory. *Psychological Research*, *83*(5), 1083-1095.

Siegel, A. W., & White, S. H. (1975). The development of spatial representations of large-scale environments. In *Advances in child development and behavior, 10*, 9-55. https://doi.org/10.1016/S0065-2407(08)60007-5

Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H. B., Choi, Y. S., Quan, X., & Joseph, A. (2008). A review of the research literature on evidence-based healthcare design. *Herd*, *1*(3), 61-125. https://doi.org/10.1177/193758670800100306

Ulrich, S., Grill, E., & Flanagin, V. L. (2019). Who gets lost and why: A representative cross-sectional survey on sociodemographic and vestibular determinants of wayfinding strategies. *PloS One*, *14*(1), 1-16.

Vilar, E., Teixeira, L., Rebelo, F., Noriega, P., & Teles, J. (2012). Using environmental affordances to direct people natural movement indoors. *A Journal of Prevention, Assessment and Rehabilitation*, *41*, 1149-1156. https://doi.org/10.3233/WOR-2012-0295-1149

Vogels, J. (2012). *Wayfinding in complex multilevel buildings: A case study of University Utrecht Langeveld building* [Master's thesis, Utrecht University, Applied Cognitive Psychology, Holland].

Weisman, J. (1981). Evaluating architectural legibility: Way-finding in the built environment. *Environment and Behavior*, *13*(2), 189-204.

Yang, Y., Merrill, E. C., Robinson, T., & Wang, Q. (2018). The impact of moving entities on wayfinding performance. *Journal of Environmental Psychology*, *56*, 20-29.

Zheng, M.-C. (2012). Time constraints in emergencies affecting the use of information signs in wayfinding behavior. *Procedia-Social and Behavioral Sciences*, *35*, 440-448.

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Biophilic architecture and water: Examining water as a spatial sensory element

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Abstract

Biophilic design can be briefly summarized as a concept affecting human well-being and nature. Thus, the inclusion of water in architectural designs has attracted attention. The purpose of this study is to evaluate the sensory perception of water in architectural space designs that can be revealed as examples of biophilic design. Scope of this study, seven contemporary architectural examples were examined within the context of the importance of perceptual aspects of water. This study is a qualitative research design. Data collection methods from documents are used. Two methods are designed for this study. The first method's aim was to analyze to describe the sensory features of water and the second method's aim was to analyze to determine the sensory and perceptual concepts of water in selected buildings. As a result, the concepts that emerged from the analyses affect the relationship between biophilic design, and architecture. The results provide 21 concepts (Noise, Endless, Calm, Curling, Plane, Disappearing, Multisensory, Kaleidoscopic Effect, Infinitely Reflections, Senses, Contact, Eco, Hearing, Part of Waterfall, Illusion, View, Peaceful, Reflection, Dramatic Panorama, Communication, Reflection) from statements describing the relationship between water, human, nature, biophilic design and architecture for the designers.

Keywords: Biophilic Architecture, Architectural Space, Water, Perception, Senses

Extended Abstract

Introduction: Water plays a significant role in life while connecting humans and nature. Water is an important element and directly affects humans' psychological and physiological structures. Water has been a focal point for people and cities throughout history. Accessibility to water has sometimes been a symbolic or vital requirement. Water has the potential to describe a city and make it readable. It can be perceived differently in mind visually and transform the space with its ambiguous form. It is also an element that can affect human psychological and physiological structures. Water is sometimes a substance in which species live, and sometimes it is an element that exists in space. This space turns into a place according to the living things in it. Seen from the opposite side, the human body is a place for water, where water settles. Thus, it is an important element that cannot be separated from human beings. From this point of view, it can be argued that using water elements in architectural designs can affect people differently.

Humans cannot be thought of independently or in isolation from nature. Therefore, nature should be intertwined with the built environment. Biophilic design gains importance at this point. Being detached from nature is a negative result of increasing built environments; thanks to biophilic architecture, it is aimed to integrate nature into architecture. Declining

water resources can also make this rupture more dangerous. Biophilic design can become an area that improves human health in all respects. Thus, this improvement is obtainable through individual space designs contributed by water. Each individual can be healed in his own living space.

Purpose and scope: Biophilic design can be briefly summarized as a concept that affects human well-being and includes nature directly or indirectly. In relation to this, the inclusion of water in the space in architectural designs has attracted attention. Scope of this study, the water element used in the space was decided to examine in 7 contemporary architectural examples of its physical and psychological effects. Water is an element that can activate all of a person's senses in a space. The sound, appearance, tactility, indirect smell, and taste of water are all physical properties. These features support the state of activating the senses. Water is also in constant physical transformation. It is found in nature in solid, liquid, and gaseous states. In contrast, all these physical properties of water reach people and stimulate their psychological perception. It is possible to argue that water spatializes the place through human beings and affects human psychology directly or indirectly. It can integrate the place with people and establish a strong bond with nature. So, it can also be a strong place identifier. Therefore, the purpose of this study was to examine the sensory-perceptual properties of water in architectural designs that can be shown as an example of biophilic design.

Method: In this study, seven contemporary architectural examples were examined within the context of the importance of water in biophilic design. Selected contemporary architectural examples include water in their designs. In this way, they can be considered within the scope of biophilic design. The examples selected in this study are designs that can be included in organic design, which is one of the two orientations of biophilic design that Kellert has stated. It is emphasized that the water element can be experienced by the user directly in the space. The seven selected examples are as follows: Fort Worth Water Gardens, The Robert and Arlene Kogod Courtyard at the Smithsonian Institution, Apple Piazza Liberty, The Therme Vals, Fallingwater, Pulitzer Arts Foundation at St. Louis, and Church on the Water. This study is a qualitative research design that includes data collection methods from documents. Two methods were designed for this study. Analyzes are made on the sensorial and the perceptual dimensions of water in selected contemporary architectural examples by contemporary architects, who can be considered within the scope of biophilic design and include water in design.

Findings and conclusion: Reading results are examined according to first method and second method. As a result of the analyzes made with two methods of reading, 21 concepts were determined. These 21 concepts are Noise, Endless, Calm for Fort Worth Water Gardens; Curling, Plane, Disappearing for The Robert and Arlene Kogod Courtyard at the Smithsonian Institution; Multisensory, Kaleidoscopic Effect, Infinitely Reflections for Apple Piazza Liberty; Senses, Contact, Eco for The Therme Vals; Hearing, Part of Waterfall, Illusion for Fallingwater; View, Peaceful, Reflection for Pulitzer Arts Foundation at St. Louis; Dramatic Panorama, Communication, Reflection for Church on the Water. Concepts were obtained with a categorization derived from the statements of the architects for their own designs or the statements of the users of the designs and those who experienced the designs. It was found that these concepts are predominantly sensory and perceptual. In this case, it was concluded that the water in space could affect human psychology within the scope of the biophilic design and architecture relationship. From this point of view, the ways of perceiving water in contemporary architectural examples that can be given as examples of biophilic design and its relationship with concepts are revealed.

Keywords: Biophilic Architecture, Architectural Space, Water, Perception, Senses

INTRODUCTION

The interaction between humans and nature is a need, and the decline of this relationship is an important problem today. Many studies prove this situation through nature is good for people (Pálsdóttir et al., 2021; Poulsen et al., 2020; Spence, 2020a; Adevi et al., 2018; Hartig et al., 2006). Kaplan and Kaplan (1989: 1) emphasized the importance of nature in their book titled The Experience of Nature as follows:

> *Nature is a valued and appreciated part of life. Examples abound. People plant flowers and shrubs and nurture house plants; cities invest heavily in trees; citizens band together to preserve natural settings they have never seen; landscapes for centuries have been the subject of painting and poetry. Nature seems to be important to people.* (Kaplan & Kaplan, 1989: 1)

Ideas to produce solutions to the gap in the relationship between humans and nature in the field of architecture are gathered in the field of biophilic design (Joye, 2007). Since humans are a part of nature like other living things, architecture needs to keep up with this situation. Sometimes by associating nature with space (Joye,

2006), and sometimes by imitating nature (Omran, 2016), designers in this field develop biophilic designs by advancing with the theme of the nature-related design.

Erich Fromm coined the term "biophilia" as "the passionate love of life and of all that is alive". He also added that this situation could happen in a person, a plant, an idea, or a social group (Fromm, 1973: 365). Then Wilson summarized "biophilia" as "the object of the reflection". In addition, he defined it as "the innate tendency to focus on life and lifelike processes" (Wilson, 1986: 1). The term biophilia began to be considered as a hypothesis by Kellert and Wilson. They explained the "biophilia hypothesis" as "a human dependence on nature that extends far beyond the simple issues of material and physical sustenance" (Kellert & Wilson, 1993: 20). Finally, the term biophilia was brought into architecture as "biophilic design" by Kellert with two books titled Building for life (2005) and Biophilic Design (2008). Kellert (2005) defined biophilic design as the instinctive connection of people with the natural world and he described two basic dimensions of biophilic design. These basic dimensions are organic design and vernacular design. The presence of water in organic design is encountered in the table titled "Elements of Biophilic Design" (Kellert, 2005: 129).

In the study published under the title of 14 Models of Biophilic Design in 2014, the effects of biophilic design in various fields have been examined. Furthermore, the "Presence of Water" model, which was one of these 14 models that is in the fifth place in the Nature in the Space Patterns section, has been emphasized. According to this model, the presence of water enriches a place's experience through seeing, hearing, or touching the water. The purpose of the Water Presence model has been exploited the multi-sensory properties of water in a way that soothes the experience of a place, encourages reflection, improves mood and provides healing from cognitive fatigue (Browning et al., 2014: 32). The effect of the presence of water in a place on stress, cognitive performance, emotion, mood and preferences has been supported by various studies such as reducing anxiety, increasing feelings of tranquility, lowering heart rate and blood pressure, improving concentration and memory restoration, enhancing perception and psychological responsiveness (Spence, 2020b; Abdalrahman, 2020; Dabbagh, 2018; Hongisto, 2017).

Once the relationship between biophilic design and water has been considered, it is seen as a direct experience of nature in terms of experiences and attributes (Kellert & Calabrese, 2015: 10). In this context, in the article titled "Nature Connectedness and Biophilic Design", pathways to nature connectedness to enact the biophilic design principles have been examined in the framework created to research on the psychological construct of nature connectedness. In this framework, the interaction of water with biophilic design principles (senses, emotion, beauty, meaning and care) has also seen in the direct experience category (Richardson & Butler, 2022: 40). In another article, water have been identified as one of the 19 overlapping concepts with the content analysis method. These concepts have tried to integrate biophilic design with healthy, sustainable, and resilient environments (Cacique & Ou, 2022).

The purpose of this study is to evaluate the contemporary architectural designs associated with water that can be revealed as examples of biophilic design. This evaluation was made on how the sensory perception of water in the architectural space. Within the scope of this study, the water element used in the space is examined within two groups: the physical and psychological effects of water. When these two groups are compared to each other, the psychological effects of water in human health are less clear than the physiological role (White et al., 2010: 482). Therefore, in this study, the physical and psychological effects of water on people in the environment are discussed together.

METHODOLOGY

In this study, the sensory and physical properties of architectural designs, which can be considered examples of biophilic building designs, are addressed. The examples selected in this study are designs that can be included in the organic design, one of the two orientations of biophilic design specified by Kellert (2005: 127). It is emphasized that the water element can be experienced directly in space. The seven examples selected are listed below (Table 1). In this table, there can be seen information about the buildings' names, the author, architects of buildings, locations of buildings, completion years of buildings, and type of water features in these buildings (Table 1).

Table 1. Selected contemporary architectural examples

Building	Author Architect	Location	Date	Water Feature
Fort Worth Water Gardens	Philip Johnson and John Burgee	Texas, USA	1974	Cascade, Wet wall, Quiet pool, Reflecting pool, Aerated pool, Active pool
The Robert and Arlene Kogod Courtyard at the Smithsonian Institution	Foster and Partners	Washington DC, USA	2007	Water scrims, Removing rainwater from the roof structure
Apple Piazza Liberty	Foster and Partners	Milan, Italy	2018	Glass fountain, Vertical jets
The Therme Vals	Peter Zumthor	Graubünden, Switzerland	1996	Vals's natural thermal springs and the source, Valser mineral water
Fallingwater	Frank Lloyd Wright	Pennsylvania, USA	1937	A waterfall on Bear Run
Pulitzer Arts Foundation at St. Louis	Tadao Ando	Washington DC, USA	2001	Water court (Linear and rectangular)
Church on the Water	Tadao Ando	Hokkaido, Japan	1988	Artificial pond (created by taking water from a nearby stream)

This study was a qualitative research design, and qualitative data were collected from the documents. Merriam (2018) has classified the document types under six headings for qualitative data collection (132-141). These types of documents are public records, personal documents, popular culture documents, visual documents, physical materials/artifacts and documents produced by the researcher (Merriam, 2018: 132-141). In this context, two methods were designed for this study (Table 2).

Table 2. Qualitative research design for this study

Qualitative Research Reading Methods: Data Collection from Documents	
First Method	**Second Method**
Aim: Describing the sensory features of water in selected buildings	**Aim:** Determining the sensory and perceptual concepts of water in selected buildings
Sample:	**Sample:**
The Researcher Herself/Himself	The Statements by the Architects of the Buildings, Theorists and Prominent Professional
Data Sources:	**Data Sources:**
Documents Produced by the Researchers	Individual Documents of People from Literature, Visual Documents
Data Collection Tools:	**Data Collection Tools:**
YouTube Videos about the selected seven examples (Popular Culture Documents and Visual Documents)	YouTube Videos for Interviews (Popular Culture Documents and Visual Documents)
	Books, Newspapers, Catalogs, Reviews, Essays, and Thesis for Other Statements
Findings	
Reading Results According to First Method	**Reading Results According to Second Method**
Discussion	
Conclusion	

The first method aimed to analyze to describe the sensory features of water in selected buildings (Table 2). Data sources for this method were documents produced by the researchers. While making this analysis, the researchers examined the YouTube videos containing the buildings (Table 2). It was analyzed the sensory properties of the water in these videos under the titles of "Sound", "Image", "Tactile Texture", "Smell" and "Taste". It was evaluated whether there is any effect of water in the space under these titles. The first method of this study progresses with some classification tables over the selected spatial examples. In the section on the results of the first method, these tables deal with perceptual senses such as the sound, image, texture, smell, and taste of water. In some samples, precise information about the senses of smell and taste could not be reached. Therefore, it is expressed with a negative mark in the tables.

In order to collect data for the first method, researchers watched YouTube videos about the selected seven examples. In order to understand the water features in the buildings more clearly, videos were preferred with no music in the background, no effect added on image colors, and containing as little speech as possible. While the researchers produced documents by interpreting their sound and image perceptions based on the videos,

they also produced documents by following the user experiences of the touch, texture, smell, and taste features based on the same videos. This can be called an experience of the water features in the place by seeing, hearing, and following the user experiences through video. Since these are determined according to the individual and user experiences watched from the YouTube videos, they do not describe the global properties or fixed properties of the buildings. These are characteristics determined based on experience.

The second method aimed to analyze the sensory and perceptual concepts of water in selected buildings (Table 2). Data sources for this method were documents produced by the statements made by the architects of buildings, theorists, and prominent professionals (Table 2). Sensory and perceptual concepts were determined with this thematic reading. The selected examples of contemporary architecture are limited according to the comments made by the architects who designed them. When an interpretation of the author architect could not be reached, a restriction was brought again according to the comments made by experienced architects or researchers in this field. In this case, the examples were chosen among those that reflect the nature in the space, interpreted by architects or people working in this field, and those that can be conceptualized with a perceptual approach. First, the statements made by architects, i.e., the authors, during the interviews about the selected examples were examined. In the case that the author could not obtain a verbal statement regarding the selected sample, other architects', theorists', and prominent professionals' opinions in this area were included.

In order to collect data for the second method, firstly, the interviews with these authors published on YouTube were examined. In some interviews, their statements about selected examples from Philip Johnson, John Burgee, and Frank Lloyd Wright were obtained. In addition to Wright's statement, his assistant's comments have also been included. About the selected examples from Norman Foster, Peter Zumthor, and Tadao Ando, their statements or statements about their designs have been reached through newspapers, books, catalogs, reviews, essays, and theses. YouTube video footage has also been discussed to understand the experience in the space in all selected examples. In this context, for example structures selected from Foster's designs and both Foster and Partners' statements on their official website and in The New York Times have been reached. For the selected sample structure of Zumthor, Bilgin's book named "Mimarın Soluğu": Essays on Peter Zumthor Architecture was examined. For the sample designs selected from Ando, Frampton's evaluations in the MOMA catalog, Güzer cited Ando's own statement in a book chapter, and the related evaluations in a master's thesis are discussed.

Finally, some inferences were obtained from the statements from the architects themselves or experienced architects about the water element in the selected contemporary architectural examples. These inferences have been translated into some concepts. These concepts have been reached as a result of the statements of the architects or the people working in this field and the examinations made on the spaces.

FINDINGS

Reading Results According to First Method

Fort Worth Water Gardens

This design is located in a built environment, and there are cascades, wet walls, a quiet pool, a reflecting pool, an aerated pool, active pool. In YouTube videos of this design, the water feature appeals to the three senses. It is considered a versatile element and it sometimes has a very strong sound, and sometimes it creates a surface that flows silently from the walls (Figure 1). In this case, two different opposite directions of water can be seen. The silence that allows the sound to emerge and the silence of the water itself can be experienced. Humans can experience space in the flow of water in different directions. Humans can experience water by hearing, seeing, touching in space.

Figure 1. Fort Worth Water Gardens, Photography: Carol M. Highsmith America Collection in the Library of Congress

When water features mentioned properties are evaluated together, the presence of sound, image, and tactile texture features can be observed on YouTube videos. YouTube videos found no statement regarding the senses of smell and taste (Table 3). Considering the mentioned properties of water according to its physical structure, it is possible to exist in liquid form and vapor forms. Considering the climatic conditions of the place where the design is made, water has no chance of appearing in a solid form. Considering the aforementioned properties according to the flow direction of the water, vertical, horizontal, and multi-directional movements are available.

Table 3. Sensory features of water in Fort Worth water gardens

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
+	+	+	-	-

The Robert and Arlene Kogod Courtyard at the Smithsonian Institution

This design is a courtyard in a historical building and is located in a built environment. In YouTube videos of this design, the water feature is directed horizontally and vertically and appeals to the three senses. The water is placed on the ground in bands (water scrims) that do not fill a volume. Humans can experience water by touching this band. The process of removing rainwater from the roof structure, which is the main character of the design, also emphasizes the sound of water. Rainwater on the wave-shaped glass structure passes away through the columns that carry the structure (Figure 2). During this transition, the flow of water is heard through the columns. At the same time, rainwater can be heard in the glass structure on the roof.

Figure 2. The Robert and Arlene Kogod Courtyard at the Smithsonian Institution, Photography: Chuck Choi

When water features properties mentioned above are evaluated together with sound, image and tactile texture features found on YouTube videos. No statement was found regarding the senses of smell and taste on YouTube videos (Table 4). Considering the mentioned properties of water according to its physical structure; it is possible to exist in liquid and vapor forms in the space. There is no statement about the solid state of the water here. Considering the aforementioned properties according to the flow direction of the water; vertical and horizontal movements are available. Although there is no multi-directional movement, the water will move curvedly on the curved roof.

Table 4. Sensory features of water in the Robert and Arlene Kogod Courtyard at the Smithsonian Institution

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
+	+	+	-	-

Apple Piazza Liberty

This design is in a built environment with a glass fountain, vertical jets, and two pools. On YouTube videos of this design, the water feature appeals to three senses. The reflective property of glass and the reflective property of water combine. Facade reflections of the historical texture can be seen on glass and water (Figure 3). Humans can experience water by hearing, by seeing, by touching in the space.

Figure 3. Apple Piazza Liberty, Photography: Giovanni Nardi

When water feature above mentioned properties are evaluated together with, the presence of sound, image and tactile texture features was found on YouTube videos. No statement was found regarding the senses of smell and taste on YouTube videos (Table 5). Considering the mentioned properties of water according to its physical structure; it is possible to exist in liquid and vapor states in the space. No statement regarding the solid state of the water here could be reached. Considering the aforementioned properties according to the flow direction of the water; vertical and horizontal are available.

Table 5. Sensory features of water in Apple Piazza Liberty

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
+	+	+	-	-

The Therme Vals

This design is located in natural environment, and it is associated with Vals's natural thermal springs, the source and Valser mineral water. On YouTube videos of this design, the water feature appeals to the five

senses. The water element dominates the spaces between the intersections of the vertical and horizontal surfaces (Figure 4). Humans can experience water by hearing, by seeing, by touching, by, smelling and tasting in the space.

Figure 4. The Therme Vals, Photography: Andrea Ceriani
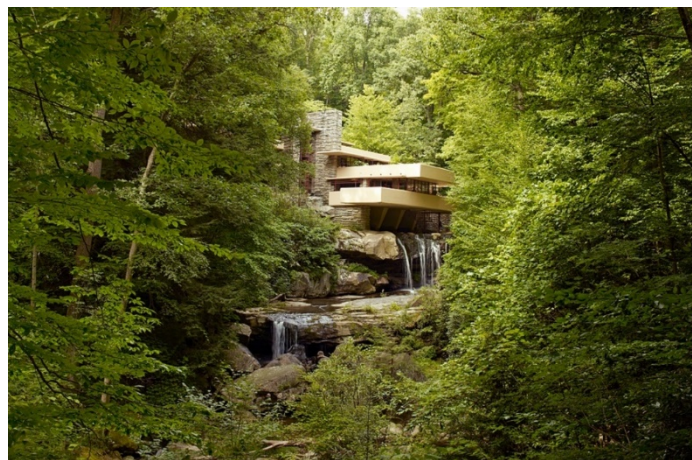
When water feature above mentioned properties are evaluated together with, the presence of sound, image, tactile texture, smell and taste features was found on YouTube videos. (Table 6). Considering the mentioned properties of water according to its physical structure; it is possible to exist in liquid and vapor states in the space. There is no statement about the solid state of the water here. Considering the aforementioned properties according to the flow direction of the water; vertical and horizontal movements are available.

Table 6. Sensory features of water in The Therme Vals

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
+	+	+	+	+

Fallingwater

This design is located in natural environment, and it is associated with a waterfall on Bear Run. On YouTube videos of this design, the water feature appeals to the three senses, and three physical states of water can be seen. It is one of the rare examples where the design is intertwined with water (Figure 5). Humans can experience water by hearing, by seeing, by touching in the space.

Figure 5. Fallingwater, Photography: Carol M. Highsmith America Collection in the Library of Congress

When water feature above mentioned properties are evaluated together with, the presence of sound, image and tactile texture features was found on YouTube videos. No statement was found regarding the senses of smell

and taste on YouTube videos (Table 7). Considering the mentioned properties of water according to its physical structure; it is possible to exist in solid, liquid and vapor states in the space. Considering the aforementioned properties according to the flow direction of the water; vertical, horizontal and multi-directional movements are available.

Table 7. Sensory features of water in Fallingwater

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
+	+	+	-	-

Pulitzer Arts Foundation at St. Louis

This design is located in a built environment with a linear and rectangular water court. On videos of this design, the water feature appeals to the one sense. The water feature is located between the masses. On one side, it opens to the void that reflects nature (Figure 6). Water is both an element that reflects nature, and that also reflects the architecture vertically with its closed edges. Humans can experience water by seeing in space.

Figure 6. Pulitzer Arts Foundation at St. Louis, Photography: William Zbaren

When water feature above mentioned properties are evaluated together with, only the definite existence of the image feature was found on YouTube videos. No statement was found regarding the senses of sound, tactile texture, smell and taste on YouTube videos (Table 8). Considering the mentioned properties of water according to its physical structure; it is possible to exist in solid, liquid and vapor states in the space. Considering the aforementioned properties according to the flow direction of the water; horizontal is available.

Table 8. Sensory features of water in Pulitzer Arts Foundation at St. Louis

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
-	+	-	-	-

Church on the Water

This design is located in a natural environment and is associated with an artificial pond created by taking water from a nearby stream. In YouTube videos of this design, the water feature appeals to the three senses, and at least two different physical structures of the water element can be seen in this design. While horizontality prevails in the water element design, it is noticed that there are small elevations in it when viewed in detail. The feature of water reflecting nature and architecture is seen in this structure of Ando. It conveys like a silent waterfall (Figure 7). Humans can experience water by hearing, by seeing, by touching in the space.

Figure 7. Church on the Water, Photography: Jason Wolfe

When water feature above mentioned properties are evaluated together with, the presence of sound, image and tactile texture features was found on YouTube videos. No statement was found regarding the senses of smell and taste on YouTube videos (Table 9). Considering the mentioned properties of water according to its physical structure; it is possible to exist in solid, liquid and vapor states in the space. Considering the aforementioned properties according to the flow direction of the water; vertical and horizontal movements are available.

Table 9. Sensory features of water in Church on the Water

Sensory Features of Water				
Sound	Image	Tactile Texture	Smell	Taste
+	+	+	-	-

Reading Results According to Second Method

Fort Worth Water Gardens

In an interview with Johnson on YouTube, he says the following about Forth Worth Water Gardens:

> *In a middle of town, the only thing besides putting up a honky-tonk ferris wheels are games of chance or Disneyworld streets and streetcars was water. Because water does all kinds of funny things. It jumps, it's quiet, it makes mist, it makes fiils, it goes high, goes low, it falls down and make some noise. The background of water works is of course endless in history of architecture and the that's what inspired us. All the successful use of water is to create breaks, to create gathering places and to make separations and to make rivers that run fast and lakes to go calm. So, water has this absolute fascination of impossibility danger falling. It can do things that nothing else can do and effect for our purposes in Fort Worth. Of course, the more water we used and more little things, we had for people to see.* (Kera, 2014)

First, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: Noise. The reason why this word is chosen as a sensory feature is due to the sound of water. Besides the sensory features, when the perceptual features of water in the architectural space are examined in the above statement, the determined words are underlined: Endless and Calm. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are: Noise, Endless, Calm (Table 10). These selected words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 10. Sensory and perceptual features of water in Fort Worth Water Gardens

Statement Type	Thematic Concepts
Interview with Philip Johnson (One of the Architects of the Building) on YouTube	Noise Endless Calm

The Robert and Arlene Kogod Courtyard at the Smithsonian Institution

Foster mentioned in The New York Times:

> *And the roof's edges curl up subtly to channel rainwater into drains that run down the center of the columns.* (Ouroussoff, 2007a)

> *A series of gorgeous planters designed by the landscape architect Kathryn Gustafson are carved from a soft, white unobtrusive marble. A fountain generates a thin plane of water at one end of the courtyard, its edge disappearing into thin slots set into the granite floor; when the water is turned off, the fountain simply disappears.* (Ouroussoff, 2007b)

First, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: Curling. The reason why this word is chosen as a sensory feature is due to the sound of rainwater flowing on the roof and inside the column. Besides the sensory features, when the perceptual features of water in the architectural space are examined in the above statement, the determined words are underlined: Plane and Disappearing. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are Curling, Plane, Disappearing (Table 11). These selected words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 11. Sensory and perceptual features of water in the Robert and Arlene Kogod Courtyard at the Smithsonian Institution

Statement Type	Thematic Concepts
Architecture Review by Nicolai Ouroussoff (Architecture Critic) in The New York Times	Curling Plane Disappearing

Apple Piazza Liberty

Some explanations about the design on the company websites of Foster and Partners are as follows:

> *A celebration of the joys of city life and embodying its dynamic nature, the signature water feature is an interactive, multisensory experience. Visitors enter the fountain through a glass-covered entrance enveloped by the sights and sounds of vertical jets of water that splash against the 26-foot-high glass walls. An immersive recreation of the childhood game of running through fountains, the experience changes throughout the day as sunlight filters through the water, while at night the glass ceiling creates a kaleidoscopic effect, with the water falling down the walls, and its reflections travelling infinitely up the sky.* (Foster and Partners, n.d.)

First, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: Multisensory. The reason why this word is chosen as a sensory feature is due to the directly related to the senses. Besides the sensory features when the perceptual features of water in the architectural space are examined in the above statement, the determined clauses are underlined: Kaleidoscopic Effect and Infinitely Reflections. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are Multisensory, Kaleidoscopic Effect, Infinitely Reflections (Table 12). These selected words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 12. Sensory and perceptual features of water in Apple Piazza Liberty

Statement Type	Thematic Concepts
Some explanations on the company websites of Foster and Partners	Multisensory Kaleidoscopic Effect Infinitely Reflections

The Therme Vals

This design differs from other examples with its ability to appeal to the five senses. Bilgin (2019: 15-18) explains the appeal to the five senses in this structure as follows:

Ancak bu kez istiflenen malzeme Alpler'in ahşabı değil taşıdır. Hamam bu gri-mavi taştan ve suyun sıvı ve buhar hallerinden ibarettir. Taşlar aynen doğada bulundukları tektonik katmanlar halinde üst üste dizilmiş ve duvarlar taşların dikine kesitini görünür kılacak şekilde istiflenmiştir. Taş ve sudan ibarettir dedik ama esasen duyulara dokunmaktan ibarettir de diyebilirdik. Çünkü taş ve su duyuları manipüle etmek üzere ve görme dışındaki duyulara doğrudan temas etmek üzere kullanılıyor. Kapalı havuzdan yüzerek geçilen, suyla dolu mağaramsı kuytu odada suyun üzerinde yasemin çiçekleri yüzmeye bırakılmış. [However, this time the stacked material is not the wood of the Alps, but the stone. The bath consists of this gray-blue stone and the liquid and vapor states of the water. The stones were stacked on top of each other in the same tectonic layers as they were found in nature, and the walls were stacked in such a way as to make the vertical section of the stones visible. We said it consisted of stones and water, but we could have said that it consisted mainly of touching the senses. Because stone and water are used to manipulate the senses and to directly contact the senses other than sight. Jasmine flowers were left to float on the water in the cave-like nook filled with water, where you can swim through the indoor pool]. (Bilgin, 2019: 15-18)

Bilgin (2019: 15-18) mentioned the existence of three physical states of water in the selected example and its appeal to the senses of sight and touch. After the explanations above, Bilgin drew attention to the sound, taste, and smell of water in the space as follows:

Bütün duvarlardan "taş ve su" temalı Zumthor'un çevresinden bir besteci tarafından bestelenmiş müziğin sesi geliyor. Binlerce damlanın çeşitli yüksekliklerden düşerek taşa temas edişinin yankıları bu sesler ve bu seslerden başka hiç uyarıcı yok bu kuytu odada [The sound of music composed by a composer around Zumthor with the theme of "stone and water" comes from all the walls. These sounds are the echoes of thousands of drops falling from various heights and touching the stone, and there is no stimulus other than these sounds in this secluded room]. (Bilgin, 2019: 15-18)

Kuytu odalardan birinin ortasında da kaynak suyun serini var. İri bir borudan çağıl çağıl yerlere akıyor. Bu kez yıkanmak, dokunulmak için değil içilmek, yani tadılmak için. Su ve taş koklandıktan, dokunulduktan, işitildikten sonra bir de tadılmış oluyor. Böylelikle tatma duyusu da tecrit edilerek uyarılmış oluyor [There is a cool spring water in the middle of one of the secluded rooms. It flows cascading down a large pipe to the ground. This time, not to be washed, touched, but to be drunk, that is, to be tasted. After smelling, touching and hearing the water and the stone, it is also tasted. In this way, the sense of taste is also isolated and stimulated]. (Bilgin, 2019: 15-18)

Dikkat edilirse bir tek görme duyusu yok ki, o da Zumthor için en kolay vazgeçilebilir duyu. Çünkü görme bu dünyanın egemen duyusu: Dışarıda her şey görme odaklı değil mi zaten? [Note that there is not only one sense of sight, which is the most dispensable sense for Zumthor. Because sight is the dominant sense of this world: Isn't everything out there focused on sight anyway?]. (Bilgin, 2019: 15-18)

First of all, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: Senses. The reason why this word is chosen as a sensory feature is due to the directly related to all senses. Besides the sensory features, when the perceptual features of water in the architectural space are examined in the above statement, the determined words are underlined: Contact and Eco. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are Senses, Contact and Echo (Table 13). These selected words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 13. Sensory and perceptual features of water in the Therme Vals

Statement Type	Thematic Concepts
Some explanations by İhsan Bilgin (Master Architect, Academician, Professor of Architecture, Dean, Writer) in his book named "Mimarın Soluğu"	Senses Contact Eco

Fallingwater

Donald Hoppen has the following description of the building:

Wright's apprentice Donald Hoppen has spoken of Wright's "uncanny sense of...genius loci" (Latin for "spirit of the place") and from the very beginning, the architect rejected a site that presented a conventional view of the waterfall; instead, he audaciously offered to make the house part of it, stating that the "visit to the waterfall in

the woods stays with me and a domicile takes shape in my mind to the music of the stream." The South-southeast orientation gives the illusion that the stream flows, not alongside the house, but through it. (Wiebe, n.d.)

In an interview on YouTube, Wright said about Fallingwater:

There was a rock ledge bank beside the waterfall and the natural thing seemed to be to cantilever the house from the rock bank over the fall, and The Bear Run house came into possession of concrete and steel of which to build a house and of course the grammar of that house geared up on that basis and of course Mr. Kaufmann's love for a beautiful site. He loved the side where the house was built, and he liked to listen to the waterfall, so that it was a prime motive in the design. I think you can hear the waterfall when you look at the design. At least it's there, and he lives independently with the thing he loved. (Manufacturing Intellect, 2019)

First, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: Hearing. The reason why this word is chosen as a sensory feature is due to the directly related to sound. Besides the sensory features when the perceptual features of water in the architectural space are examined in the above statement, the determined words are underlined: Part of Waterfall and Illusion. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are: Music of the Stream, Illusion, Hearing (Table 14). These selected words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 14. Sensory and perceptual features of water in Fallingwater

Statement Type	Thematic Concepts
Donald Hoppen's (Wright's apprentice) description in an Essay by Charles Wiebe Interview with Frank Lloyd Wright (Architect of the Building) on YouTube	Hearing Part of Waterfall Illusion

Pulitzer Arts Foundation at St. Louis

Since there is no text of Ando related to this example, it has been tried to go through a thesis.

The museum is inwardlooking, or even secretive. What one can see from outside are horizontal rectangular masses, concrete walls, and small openings. On the south side is a peaceful water area extending to the skyline of the city in the distance; on the east side is the exhibition zone with the highest ceiling. The lobby is a concrete box connecting two long building parts, and its large windows face southwest to the water surface. Water is always an important architectural element for Ando. Just like Ando's other works, the Pulitzer Foundation for the Arts has its own nature. Between two concrete boxes, there is a narrow rectangular artificial pond, opening to the southwest. After taking a U turn from the entrance gate, there is a curtain wall, through which one may have the whole view of the pond. As the pond is enclosed by three concrete boxes, in most of times the pond is peaceful. The peaceful pond is how Ando achieves the abstract from the nature: light comes to the interior space through the curtain wall; water is still on the pond; and the sky is reflected by the water. (Jiang, 2019: 14-18)

First, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: View. The reason why this word is chosen as a sensory feature is due to the directly related to image. Besides the sensory features, when the perceptual features of water in the architectural space are examined in the above statement, the determined words are underlined: Peaceful and Reflection. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are: View, Peaceful, Reflection (Table 15). These selected words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 15. Sensory and perceptual features of water in Pulitzer Arts Foundation at St. Louis

Statement Type	Thematic Concepts
Some explanations by Cunbei Jiang (Master Architect) in his Master Thesis	View Peaceful Reflection

Church on the Water

In the catalog published by MOMA, Frampton wrote about the building:

> *The wall behind the altar is constructed entirely of glass, affording a dramatic panorama of the pond with a large cross set into the water. The glass wall itself, spanned by a cruciform mullion, can slide to the side, like a giant shdji screen, opening the chapel toward nature.* (Frampton, 1991: 34)

In the the book titled "Boyut Çağdaş Mimarları Dizisi 6 - Tadao Ando", C. Abdi Güzer cited the Ando's statement about the building:

> *Bu projede yakındaki bir dereden su alınarak yapay bir göl oluşturuldu. Doğanın bir parçası olan suyun mimarlıkla ve insanlarla ilişkisi üzerine düşünmeye başladım. [In this project, an artificial lake was created by taking water from a nearby stream. I started to think about the relationship of water, which is a part of nature, with architecture and people].* (Güzer, 2000: 36)

> *Uzun duvar boyunca yapıya yaklaşıldığında derenin sesini duyuyor fakat onu göremiyorsunuz, heyecan yükseldikçe duvardaki bir açıklıktan içeri giriliyor ve 180 derece dönülerek suyla karşılaşılıyor. Su sesini dinleyerek yumuşak bir tepeye tırmanırken, dört bir tarafı cam duvarlarla kaplı bir mekana yöneliniyor. [When you approach the building along the long wall, you can hear the sound of the stream, but you cannot see it. As the excitement rises, one enters through an opening in the wall and turns 180 degrees to come across water. While climbing a soft hill listening to the sound of water, you head towards a place covered with glass walls on all four sides].* (Güzer, 2000: 36)

> *Burada insan suyun, rüzgarın ve kuşların seslerini dinleyerek doğayla iletişim kuruyor. Ben izleyicilerin sadece gözlerine değil tüm duyularına hitap eden bir mimari yapmak istedim. [Here, people communicate with nature by listening to the sounds of water, wind and birds. I wanted to make an architecture that appeals not only to the eyes of the audience, but also to all their senses].* (Güzer, 2000: 36)

> *Şapelin önündeki suyun yüzeyi çevrenin muhteşem doğası içinde soyut bir ayna yüzeyi gibi uzanıyor. Manzara günün saatlerine göre değişiyor ve suda yansıyor. [The surface of the water in front of the chapel stretches out like an abstract mirror surface in the magnificent nature of the surroundings. The landscape changes according to the time of day and is reflected in the water].* (Güzer, 2000: 37)

First, when the sensory features of water in the architectural space are examined in the above statement, the determined word is underlined: Dramatic Panorama. The reason why this clause is chosen as a sensory feature is due to the directly related to image. Besides the sensory features, when the perceptual features of water in the architectural space are examined in the above statement, the determined words are underlined: Communication and Reflection. When these two situations are combined, the words chosen from the statements for the conceptualization of water through space are: Dramatic Panorama, Communication, Reflection (Table 16). These words support both the relationship of water with space and the concepts that can be considered in common with the pure appearance of architecture.

Table 16. Sensory and perceptual features of water in Church on the Water

Statement Type	Thematic Concepts
Some explanations by Kenneth Frampton (Architect, Critic and Historian) in the catalog published by MOMA	Dramatic Panorama Communication Reflection

DISCUSSION

In this section, all the findings were tried to be connected by emphasizing the inferences obtained with a biophilic design approach, why these findings were traced, and the reflections of the relations between concept and mass on nature and water. In this context, a comparison was made between the analyzed examples, emphasizing their similarities and differences regarding the final perceptual result.

Reading results according to the first method were combined in Table 17. The sensory features of water in selected buildings were evaluated according to the five senses decided based on YouTube videos. The same sensory features of water were determined in Fort Worth Water Gardens, in Smithsonian Institution Courtyard, in Apple Piazza Liberty, in Fallingwater and in Church on the Water (Table 17). On YouTube videos, while

information about "Sound", "Image" and "Tactile Texture" features can be determined from the experience of people in the space, precise information about "Smell" and "Taste" features could not be accessed for these buildings (Table 17). Apart from the Pulitzer Arts Foundation in St. Louis, the "Sound" feature was determined in 6 other selected architectural designs. "Image" feature was determined in all seven selected architectural designs. Apart from the Pulitzer Arts Foundation in St. Louis, the "Tactile Texture" was determined in 6 other selected architectural designs. Apart from The Therme Vals, the "Smell" and "Taste" feature was not determined in 6 other selected architectural designs (Table 17). All sensory features of water were determined in The Therme Vals (Table 17). On YouTube videos, "Sound", "Image" and "Tactile Texture", "Smell" and "Taste" features was determined from the experience of people in the space for this building (Table 17). So, this building was different from the others. Only one feature of water was determined in Pulitzer Arts Foundation at St. Louis (Table 17). On YouTube videos, while information about "Image" feature was determined from the experience of people in the space, precise information about "Sound", "Tactile Texture", "Smell" and "Taste" features could not be accessed for this building (Table 17). In this case, The Therme Vals stood out by showing that all sensory features were experienceable, while the Pulitzer Arts Foundation at St. Louis showed that only one sensory feature was experienceable.

Table 17. Sensory features of water in selected buildings

Selected Example	Sensory Features of Water				
	Sound	**Image**	**Tactile Texture**	**Smell**	**Taste**
Fort Worth Water Gardens, Philip Johnson and John Burgee	+	+	+	-	-
The Robert and Arlene Kogod Courtyard at the Smithsonian Institution, Foster and Partners	+	+	+	-	-
Apple Piazza Liberty Foster and Partners	+	+	+	-	-
The Therme Vals Peter Zumthor	+	+	+	+	+
Fallingwater Frank Lloyd Wright	+	+	+	-	-
Pulitzer Arts Foundation at St. Louis Tadao Ando	-	+	-	-	-
Church on the Water Tadao Ando	+	+	+	-	-

Reading results according to the second method were combined in Table 18. The sensory and perceptual features of water in selected buildings were evaluated according to the statements. Three concepts were obtained from the statements obtained for each selected building (Table 18). A total of 21 concepts were determined by thematic reading (Table 18). Relationships between these 21 concepts and exemplary spaces were tried to be established through the element of water in Table 18. At the same time, concepts were discussed reflections of the relations between analyzed examples of nature and water. The effect of the presence of water in a place on stress, cognitive performance, emotion, mood, preferences was a theme of nature-related design and interaction between humans and nature in biophilic design. This information was consistent with the results obtained in this study.

"Contact" concept for The Therme Vals, "Part of Waterfall" concept for Fallingwater, "Communication" concept for Church on the Water were shown that these architectural designs were part of nature. From this point of view, it could be stated that these architectural designs can increase the relationship between humans and nature. It also supported being close to nature based on the definition of Kellert and Wilson's (1993) as "a human dependence on nature that extends far beyond the simple issues of material and physical sustenance" and Kellert's (2005) as biophilic design as the instinctive connection of people with the natural world.

"Calm" and "Noise" concepts for Fort Worth Water Gardens, "Multisensory" and "Disappearing" concepts for The Robert and Arlene Kogod Courtyard at the Smithsonian Institution, "Infinitely Reflections" concept for Apple Piazza Liberty, "Peaceful" concept for Pulitzer Arts Foundation at St. Louis were shown that these architectural designs could be related emotions and moods because of effect the sensory perception.

All selected words for the examples support both the relationship of water with space and the concepts that could be considered in common with the pure appearance of architecture. "Endless" concept for Fort Worth Water Gardens, "Curling" and "Plane" concepts for The Robert and Arlene Kogod Courtyard at the Smithsonian Institution, "Kaleidoscopic Effect" concept for Apple Piazza Liberty, "Contact" and "Eco" concepts for The Therme Vals, "Part of Waterfall" and "Illusion" concepts for Fallingwater, "View" and "Reflection" concepts for Pulitzer Arts Foundation at St. Louis, "Dramatic Panorama" "Communication" and "Reflection" concepts for Church on the Water were shown that there was a connection between these water features and these architectural designs of the masses.

Table 18. Conceptualization of water in selected buildings

Selected Example	Concepts	Figures
Fort Worth Water Gardens, Philip Johnson and John Burgee	Noise Endless Calm	
The Robert and Arlene Kogod Courtyard at the Smithsonian Institution, Foster and Partners	Curling Plane Disappearing	
Apple Piazza Liberty, Foster and Partners	Multisensory Kaleidoscopic Effect Infinitely Reflections	
The Therme Vals, Peter Zumthor	Senses Contact Eco	
Fallingwater, Frank Lloyd Wright	Hearing Part of Waterfall Illusion	
Pulitzer Arts Foundation at St. Louis, Tadao Ando	View Peaceful Reflection	
Church on the Water, Tadao Ando	Dramatic Panorama Communication Reflection	

CONCLUSION

In this study, the field studies carried out above resulted in the acquisition of concepts arising from some statements and videos. It was observed that the concepts obtained from the statements intersect in the selected architectural examples, both in water use and the characteristic architectural line of the building. From the statements obtained, this compatibility between both the water and the characteristic elements of the building was conceptualized. The multidimensional linear oasis design in the Fort Worth Water Gardens could connect one of its concepts, "Endless"; the wavy glass-steel and the fluid-form of the roof design in the Robert and Arlene Kogod Courtyard at the Smithsonian Institution could connect one of its concepts "Curling"; the glass ceiling and fountain's wall design in the Apple Piazza Liberty could be connect one of the its concepts "Kaleidoscopic Effect"; the half buried into the hillside design in The Therme Vals could connect one of its concepts "Contact"; the planes and relationship of layers design in Fallingwater could connect one of the its concepts "Part of Waterfall"; the design of the canyon-like walls in Pulitzer Arts Foundation at St. Louis could connect one of its concepts "Peaceful"; the partly designed onto the pond the Church on the Water could connect one of its concepts "Communication". From this point of view, it could be stated that there was a connection between the sensory and perceptual aspects of the water in the buildings and the concepts obtained with the biophilic approach from the statements of the author architects.

According to 14 Models of Biophilic Design (2014), the presence of water enriches a place's experience through seeing, hearing, or touching the water. In addition to this situation, it was identified from the findings that experience a place through smelling and tasting the water in The Therme Vals. Therefore, when the other smelling and tasting experiences were added to this seeing, hearing or touching experiences, and in this context, the presence of water could enrich the experience more. On the other hand, within the scope of biophilic design, besides the use of water as an element in the space, it was observed that water was also reflected in the building architecture. In addition to the physiological and psychological effects of the presence of water in the space, it was observed that it was a phenomenon that also shapes architectural design decisions. As a result, it was concluded that sensory perception of the water features in the architectural space can affect human psychology within the scope of the biophilic design, architecture and author architects' relationship in this study. From this point of view, the ways of perceiving water in contemporary architectural examples that could be given as examples of biophilic design and determined concepts were found to be related.

Authors' Contributions

The authors contributed equally to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

This study does not require ethics committee approval.

REFERENCES

Abdalrahman, Z., & Galbrun, L. (2020). Audio-visual preferences, perception, and use of water features in open-plan offices. *The Journal of the Acoustical Society of America, 147*(3), Article 1661. https://doi.org/10.1121/10.0000892

Adevi, A. A., Uvnäs-Moberg, K., & Grahn, P. (2018). Therapeutic interventions in a rehabilitation garden may induce temporary extrovert and/or introvert behavioural changes in patients, suffering from stress-related disorders. *Urban Forestry & Urban Greening, 30,* 182-193. https://doi.org/10.1016/j.ufug.2018.02.010

Bilgin, İ. (2019). *Mimarın soluğu Peter Zumthor mimarlığı üzerine denemeler.* Metis Yayınları.

Browning, W. D., Ryan, C. O., & Clancy, J. O. (2014). *14 patterns of biophilic design-improving health & well-being in the built environment.* Terrapin Bright Green LLC.

Cacique, M. & Ou, S-J. (2022). Biophilic design as a strategy for accomplishing the idea of healthy, sustainable, and resilient environments. *Sustainability, 14*(9), 5605. https://doi.org/10.3390/su14095605.

Dabbagh, S. (2018). The role of water features reducing anxiety in interior spaces public waiting spaces in healthcare buildings as a case study. *Muthanna Journal of Engineering and Technology (MJET), 4*(2), 66-74. https://doi.org/10.18081/mjet/2016-4/66-74

Frampton, K. (1991). *Tadao Ando.* The Museum of Modern Art Archive: Distributed by H.N. Abrams.

Fromm, E. (1973). *The Anatomy of Human Destructiveness*. Holt, Rinehart and Winston.

Foster and Partners. (n.d.). *Apple Piazza Liberty.* https://www.fosterandpartners.com/projects/apple-piazza-liberty/ (22.04.2022).

Güzer, C. A. (2000). Modernizm'in son savaşçısı, Tadao Ando. In M. Ekincioğlu (Ed.), *Çağdaş Dünya Mimarları 6-Tadao Ando* (35-47). Boyut Yayın Grubu.

Hartig, T., & Staats, H. (2006). The need for psychological restoration as a determinant of environmental preferences. *Journal of Environmental Psychology, 26*(3), 215-226. https://doi.org/10.1016/j.jenvp.2006.07.007

Hongisto, V., Varjo, J., Oliva, D., Haapakangas, A., & Benway E. (2017). Perception of water-based masking sounds-long-term experiment in an open-plan office. *Frontiers in Psychology, 8,* Article 1177. https://doi.org/10.3389/fpsyg.2017.01177

Jiang, C. (2019). *Museum design as a tool for a city* [Unpublished Master Thesis, University of Massachusetts Amherst, USA]. https://doi.org/10.7275/14825359

Joye, Y. (2006). An interdisciplinary argument for natural morphologies in architectural design. *Environment and Planning B: Planning and Design, 33*(2), 239-252. https://doi.org/10.1068/b31194

Joye, Y. (2007). Architectural lessons from environmental psychology: The case of biophilic architecture. *Review of General Psychology, 11*(4), 305-328. https://doi.org/10.1037/1089-2680.11.4.305

Kaplan, R., & Kaplan, S. (1989). *The experience of nature.* Cambridge University Press.

Kellert, S. R. (2005). *Building for life: Designing and understanding the human-nature connection.* Island Press.

Kellert, S. R. & Calabrese, E. (2015). *The practice of biophilic design*. www.biophilic-design.com (22.04.2022).

Kellert, S. R., Heerwagen, J., & Mador, P. (2008). *Biophilic Design. The Theory, Science, and Practice of Bringing Buildings to Life*. John Wiley and Sons.

Kellert, S. R., & Wilson, E. O. (1993). *The Biophilia Hypothesis.* Island Press.

Kera. (2014, October 17). *Water garden* [Video]. YouTube. https://www.youtube.com/watch?v=PzAXMkwstzo&t=361s

Manufacturing Intellect. (2019, September 17). *A conversation with Frank Lloyd Wright (1953)* [Video]. YouTube. https://www.youtube.com/watch?v=W8EABJrMplY

Merriam, S. B. (2018). *Nitel araştırma: Desen ve uygulama için bir rehber*. Nobel Akademik. Yayıncılık.

Omran, W. M. (2016). Biomimicry applications in agriculture to benefit from water renewable resources. *International Journal of Science and Research (IJSR), 5*(2), 333-336.

Ouroussoff, N. (2007a, November 19). A delicate glass roof with links to the past. *The New York Times*. https://www.nytimes.com/2007/11/19/arts/design/19fost.html (17.03.2021).

Ouroussoff, N. (2007b, November 20). Norman Foster's courtyard atrium: A glass canopy connecting history. *The New York Times*. https://www.nytimes.com/2007/11/19/arts/19iht-arch.1.8388840.html (17.03.2021).

Pálsdóttir, A.M., Spendrup, S., Mårtensson, L., & Wendin, K. (2021). Garden smellscape–experiences of plant scents in a nature-based intervention. *Frontiers in Psychology, 12,* Article 667957. https://doi.org/10.3389/fpsyg.2021.667957

Poulsen, D.V., Pálsdóttir, A.M., Christensen, S.I., Wilson, L., & Uldall, S.W. (2020). Therapeutic nature activities: A step towards the labour market for traumatized refugees. *International Journal of Environmental Research and Public Health, 17*(20), Article 7542. https://doi.org/10.3390/ijerph17207542

Richardson, M. & Butler, C. W. (2022) Nature connectedness and biophilic design. *Building Research & Information, 50*(1-2), 36-42. https://doi.org/10.1080/09613218.2021.2006594

Spence, C. (2020a). Using ambient scent to enhance well-being in the multisensory built environment. *Frontiers in Psychology, 11,* Article 598859. https://doi.org/10.3389/fpsyg.2020.598859

Spence, C. (2020b). Senses of place: Architectural design for the multisensory mind. *Cognitive Research: Principles and Implications, 5*, Article 46. https://doi.org/10.1186/s41235-020-00243-4

White, M.P., Smith, A.T., Humphryes, K., Pahl, S., Snelling, D., & Depledge, M. (2010). Blue space: The importance of water for preference, affect, and restorativeness ratings of natural and built scenes. *Journal of Environmental Psychology, 30*(4), 482-493. https://doi.org/10.1016/j.jenvp.2010.04.004

Wiebe, C. (n.d.). *Frank Lloyd Wright, Fallingwater.* Khan Academy. https://www.khanacademy.org/humanities/ap-art-history/later-europe-and-americas/modernity-ap/a/frank-lloyd-wright-fallingwater (17.03.2021).

Wilson, E. O. (1986). *Biophilia.* Harvard University Press.

Figure References

Figure 1: Highsmith, C. M. (2014). *Fort Worth Water Gardens.* America Collection in the Library of Congress. (The photo is used with the special permission from Carol M. Highsmith) https://www.loc.gov/item/2014633938/ (15.09.2022).

Figure 2: Choi, C. (2007). *The Robert and Arlene Kogod Courtyard at the Smithsonian Institution.* (The photo is used with special permission from Chuck Choi) https://arquitecturaviva.com/works/remodelacion-de-la-smithsonian-institution-3#lg=1&slide=9 (15.09.2022).

Figure 3: Nardi, G. (n.d.). *Apple Piazza Liberty.* (The photo is used with special permission from Giovanni Nardi) https://divisare.com/projects/399466-foster-partners-giovanni-nardi-apple-piazza-liberty#lg=1&slide=22 (25.09.2022).

Figure 4: Ceriani, A. (2014). *The Therme Vals.* (The photo is used with the special permission from Andrea Ceriani) https://www.archdaily.com/13358/the-therme-vals/5fc140f063c017d62c001224-the-therme-vals-photo?next_project=no (14.09.2022).

Figure 5: Highsmith, C. M. (2007). *Fallingwater.* America Collection in the Library of Congress. (The photo is used with the special permission from Carol M. Highsmith) https://www.loc.gov/item/2010630255/ (29.08.2022).

Figure 6: William Zbaren. (2007). *Pulitzer Arts Foundation at St. Louis.* (The photo is used with the special permission from William Zbaren) https://www.zbaren.com/pulitzer-museum/fyj4rnlrhzgk6qyximjzqy8q4gxd02 (22.09.2022).

Figure 7: Wolfe, J. (2008). *Church on the Water.* (The photo is used with the special permission from Jason Wolfe) www.flickr.com/photos/jswolfe/2959854905/in/album-72157608235514578/ (04.10.2022).

Author's Biography

Damla Katuk continues her master thesis under the supervision of Assoc. Prof. Dr. Emine Köseoğlu with full scholarship in the Master of Architecture Program at Fatih Sultan Mehmet Vakif University. She is a visiting lecturer and design studio instructor at Yildiz Technical University Faculty of Architecture Department of Architecture in Introduction to Architectural Design, Architectural Design 1 and Aquarelle Technique courses. She continues to develop her conceptual and experimental works on subjects such as watercolour, ink, sketch, illustration, design, architectural space, and Franz Kafka's literary works. She organizes various workshops, seminars, and exhibitions at universities.

Emine Köseoğlu graduated from the Department of Architecture at Trakya University in 2002. With her thesis on cross-cultural spatial perception in hotel lobbies, she graduated from Yıldız Technical University, Department of Architecture in 2004; completed her Ph.D. research in 2012 on formal, subjective and syntactical spatial legibility at YTU; and received the title of Associate Professor in April 2018. Her main research areas are architectural design, environmental psychology, and urban morphology, where she focuses on spatial cognition, spatial perception, spatial legibility, environmental image, architectural phenomenology, literary space, destination image, tourist behavior, literary tourism, design/architectural education, culture-space relations, space syntax.

Research Article

Iranian-Chinese textiles impact on Italian peers depicted in some 14th-century Tuscan paintings

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Abstract

The influence of Chinese art, following the conquests of Mongols, is visible in other countries' arts, including Italian textiles and paintings of the 14th century. These influences can be approached from two perspectives: the exported Chinese products through the Silk Road. The following perspective is the Ilkhanid Dynasty's reign in Iran, who tried to expand their political and commercial relationships with the western countries, especially Italy, to confront Egyptian Mamelukes as their common enemy. Ilkhanid's main merchandise was silk textiles representing a combination of traditional Persian and Chinese iconography that were distinctive characters compared to the original Chinese works. The impact of these textiles on Italian fabrics could be examined using both preserved samples kept in museums and the fabrics illustrated in the paintings. The present article, using by descriptive-analytical method, shows the effect of Ilkhanid art on 14th century Italian fabrics using selected paintings of that era in Tuscany province. As a result, it can be said that the presence of oriental iconography had become a visual culture in Tuscan paintings in the 14th century.

Keywords: Iranian Textiles, Chinese Iconography, Italian Fabrics, Simone Martini, Spinello Arentino

Extended Abstract

Introduction: Silk production has ancient roots in China, and its history is back to the 3rd millennium BCE. Following the conquest of Mongolia in the 13th century, over a vast section of the world's political geography, the presence of Chinese motifs such as dragons, mythical animals, and plants on textiles woven in other countries became stronger. On the other hand, Iran, as an intermediary country between East Asia and Europe, in the 14th century, was ruled by Ilkanid (r.1256-1335) and Timurid (r.1370-1507), both of them with Mongol roots; so, it can be seen the interaction between two iconographical culture which effected by the growing of intercultural exchanges and the new horizons of trading, arrived to European countries. Nowadays, surveying the iconography of some textile fragments produced in Lucca in the 14th century, some oriental roots can be seen. In these textiles, they can derivate Italian roots, Chinese roots, and Iranian ones. A more interesting point in this topic is the presence of these fabrics in paintings of the said century in Tuscan province, which was considered a turning point in western art. The presence of these motifs in western art is one of the attractive subjects in the field of art history. It has been more than a century since the valuable book "Kunstgeschichte der Seidenweberei" by Von Falke (1913). He surveyed historical textiles based on history and geography. Later, many researchers were attracted to the presence of oriental silk and, more important to that, oriental elements in western art because Von Falke, in surveying Italian fabrics, turned to "chinesischer Einfluss in Italian" and "sinopersischer Einfluss in Italian," which pointed to the relation between western textiles with Chinese ones in 13th and 14th centuries. Wardwell took another significant step in this respect at the end of the eighties and, aiming to categorize Asian textiles in the said centuries, brought a new vision to this topic (Wardwell, 1989). In their various research types, other scholars spoke about these foreign elements while studying the history of silk production in Lucca. Between the second half of 1800 and the first three decades of 1900, many catalogs were published regarding the growth of European collections of historic fabrics, and the topic of motifs presented in fabrics was increasingly under attention. By the beginning of the 1960s, Devoti (1974) developed a new method for surveying not only historical ones produced in Lucca but also, as her suggested methodology,

technical and artistic aspects of textile(s) to be studied all together. This prominent master is one of the most important connoisseurs of fabrics produced in Lucca, and her researches are still a significant source in this field. Around the end of this decade, Klesse (1967) published "Seidenstoffe in der italienischen Malerei," in which she reiterated the importance of the issue. As an active researcher, Maria Ludovica Rosati believes that there can be no doubt about the presence of foreign elements in Italian fabrics during the 13th and 14th centuries (Rosati, 2010). This scholar, who has mentioned this subject in her different articles, published a book under the title of "Lucca una città di seta" with the cooperation of Del Punta in 2017 (Del Punta & Rosati, 2017). In this book, various historical, economic, cultural, and technical aspects of fabric production in Lucca are surveyed. In the first chapter, Rosati talked about different Oriental fabrics in Lucca, explaining their iconography. It is considered one of the credible sources for obtaining the Oriental models available in fabric weaving in this city in the Middle Ages.

Purpose and scope: This article aims to trace the iconography of fabrics produced in Italy in the 14th century. Aside from the fabrics left from this period, the presence of fabrics in paintings can be considered significant data, the fabrics of some of the most important paintings of this era are surveyed and rotted.

Method: The present research is based on theoretical research and based on the meta-synthesis method. This proficiency is a technique for examining qualitative research, so it is based on evidence from documentary studies, containing information and outcomes provided by previous authors and pioneers of this subject.

Findings and conclusion: One of the most important types of Iranian art of which the signs can be traced in other places is fabric weaving, which contains various iconography from different eras. In the 14th century, Mongol governments with Chinese roots ruled Iran, and their style of fabric weaving, including their unique iconography, influenced this industry in Iran. On the other hand, due to the presence of Italian merchants in Iran and the fame of the Raw silk produced in the East, a big part of this valuable material was transferred to Italy during this period. So, the marks of Iranian iconography are observable in Italian fabrics of that time. By the comparative study of this Italian art in the 14th century, it can be seen that the iconography of Italian fabrics combines of Chinese signs and Iranian composition under the influence of Italian art. Studying iconography in Italian fabrics in the 14th century, aside from the samples left in museums, is also possible by studying the painting illustrating these fabrics. Based on the surveys, it can be concluded that fabric was a phenomenon rather than a commercial item in that century and created a kind of cosmopolitanism. This means an Italian artist in work on the topic of Christian religion used a fabric with Oriental iconography. Generally, the artists active in this field are divided into three groups: artists such as Simone Martini and the followers of his style, who used fabrics with a concentration on a golden color and probably have encountered fabrics produced in central Asia; artists who used fabrics with green and blue background whose probable source of inspiration had been Iranian fabrics produced in Ilkanid period; and finally artists who used fabrics with a red or orange background, following Spinello Arentino's style.

Keywords: Iranian Textiles, Chinese Iconography, Italian Fabrics, Simone Martini, Spinello Arentino

INTRODUCTION

Historically, one of the arts under the direct influence of China art is fabric weaving. This country has been famous for its sericulture and silk production since to the 3rd millennium BCE (Daylan, 2019: 1-4). Silk products from China have always been welcomed in other countries. Following the conquest of Mongolia over a vast section of the world's political geography, the presence of Chinese motifs such as dragons, mythical animals, and plants on textiles woven in other countries became stronger. According to the available documents, during the 14th century, the governments derived from Mongol dynasties (Ilkhanid and Timurid) were ruling Iran (Schrato, 1959). Simultaneously, Italian Kings and merchants tried to expand commercial and political relations with the Oriental rulers like the states of the Levant -that is an approximate historical area in the Eastern Mediterranean, but it should be mentioned that Most Italian merchants were in Cairo- Byzantium, Iran and Central Asia (Jacoby, 2004: 233). As a result, the iconography of Iranian and Italian fabrics was impressed by Chinese art, which is traceable in fabrics left from that era. The noticeable point about Italian fabrics is their similarity in composition, color, and content to Iranian fabrics produced in the same era. In other words, Italian fabrics of the 14th century were a combination of the iconography of Chinese and Iranian origins influenced by artistic concepts. There are two main sources for studying about Italian fabrics: first, fabrics which are kept in museums all over the world; and the second, fabrics which are displayed by Gothic and Renaissances painters in their works. A comparison of the textiles in museums and the textiles painted by the Italian painters show that they were completely loyal to the original fabrics (Figure 5-7) and illustrated

them with exact details in the paintings. These artworks are valuable sources to examine the iconography of the fabrics of which the original ones are defunct.

METHOD

The present research is based on theoretical research and based on the meta-synthesis method. This proficiency is a technique for examining qualitative research (Jensen & Allen, 1996), so it is based on evidence from documentary studies, containing information and outcomes provided by previous authors and pioneers of this subject.

A brief introduction to the history of Iran and Italy in the 14th century

Iran in the 14th century was ruled by Ilkanid (r.1256-1335) and Timurid (r.1370-1507), both with Mongol roots. The long-term relationship between Iran and China goes back to ancient times (around 200 BC); however, a strong influence of the Chinese style occurred during the Mongol invasion of Iran on 1 Jan. 1256 AD, the Mongol prince *Hulegu Khan* (r. 1256-1265), a grandson of *Genghis Khan* (r. 1158-1227), led his army into Iranian territory (Dashdondog, 2010: 127). They ruled Iran, after the assault, for 79 years, from 1256 to 1335 AD. The Mongols and their Persian administrators reinvigorated the idea of the political and cultural autonomy of Iran, renewed her ties with the central Asia world, and in so doing, prepared the ground for the realization of Iranian potential and talents (Kamaroff & Carboni, 2004: 25). Timurid was a dynasty of Turk-Mongol who ruled Iran for more than a century, from 1370 to 1507 (Pubblici, 2007: 35). With this kingdom, Iran's borders extended to Samarkand in this era, and this city was nominated as their capital. Soon the capital city became the gathering point of artists. In this era, Iranians developed a commercial relationship with Western Europe (Ni & Kaner, 2020: 502). At the same time in Italy, feudal governments-which started after Charles the Fat in 888 AD- was growing and expanding. These governments were in a military and political battle with Rome and tried to keep their independence. These events led to the formation of several states in Italy (Figure 1).
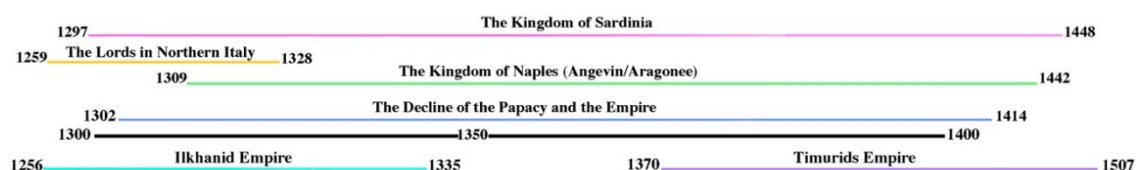
Figure 1. Italian governments at the time of Ilkhanid and Timurid

The common enemy, Egyptian Mamluks, caused the advent of political and commercial relations between Iranian governments (especially Ilkhanid) and Italian ones. During the 14th century, Italian culture underwent an explosion of cultural development, which lasted until the 16th century and involved ethical, doctrinal, literary, scientific, and technical subjects (Guarnieri & Del Negro, 2019). Today, there are several documents indicating the expansion of commercial activities of Venetian and Genoese businessmen in Ilkhanid territories. One of the most important aspects of these activities was related to silk. During the 14th century, the Raw silk imported from the Oriental territories to Italy in large volumes triggered a commercial silk race between Italy and Mongol territories. The new competition was intense, more egalitarian, and less hierarchical, and many small and medium-sized companies were linked together by a dense network of relationships (Poloni, 2017: 121-146). The presence of Mongol silks was so vast and effective in Italy that in Lucca, the important city of Tuscany, weavers produced different silk products under Mongol-Persian types.

Fabric weaving in Iran in the 14th century

The rule of the Mongols rule created an ethnographic change, with the region division into separate cultural areas. In the realm of culture, science and daily life, they brought in changes of all sorts – new foods, new plants, and new styles of art (Manz, 2007: 55). During the Mongol dynasty government in Iran, the textile industry progressed and annually a part of produced textiles was exported to other countries. As can be seen in historical documents like *Al-Morshed fi al-hisab* that is a book in Ilkhanid period to teach the calculation, these pieces of art were mostly exported to China (Vosoughi & Soleymani, 2013: 184). Due to the lack of

written documents, there is no detailed information about the texture of fabrics and more surveying can be placed on the iconographical aspects. However, based on the writings by explorers and the clothing of people pictured in paintings, it can be concluded that more open designs replaced thick and fully ornamented fabrics; and the skills of Iranian weavers grew in popularity. Mongols had a greedy interest in brocade, and gold was praised for its color and brilliance associated with the moon and the sun, which were important in their culture (Allsen, 1997: 110). Therefore, weaving various types of brocade, which had been already prevalent in Iran, continued in the Ilkhanid era. Weaving silk fabric became an important industry in *Guilan*, *Khurasan*, *Yazd*, and *Kerman*. The utilization of Iranian scientists and intellectuals in art and architecture indicates of Iranian cultural influence on Mongols (Ashrafi & Mirjafary, 2015: 12). This era was one of the most magnificent periods in Iran's cultural-artistic history. This attitude continued after Ilkhanid kings and Timur, who was famous for his assault, brutal murders in conquered cities, and as a world conqueror, was strangely known as the initiator of art (focusing on Iranian art) resuscitation and supported artists (La'l Shateri & Rajabi, 2016: 80). For this reason, the presence of Iranian art, originated from Chinese art, continued for the whole century and it was not just limited to Ilkhanid epoch.

Fabric weaving in Italy in the 14th century

In the history of fabric weaving in Italy, the 14th century is considered a turning point in which fabric production witnessed noticeable progress in weaving and iconography. In this respect, two cities should be mentioned as the important centers of fabric production in this period: Venice in the north and Lucca in the center of Italy. By surveying the documents (commercial letters, lists, ledgers) left from that era in archives, it can be concluded that Lucca was the first fabric production center in Italy. The oldest document obtained about fabric production is date back to 1223, now kept in the city's archive (Del Punta, 2016: 16). Silk production was the heart of commercial activities of this city, and silk trade with the Middle East started in Lucca which was limited to raw silk and raw material for fabric dyeing in the beginning (Figure 2).
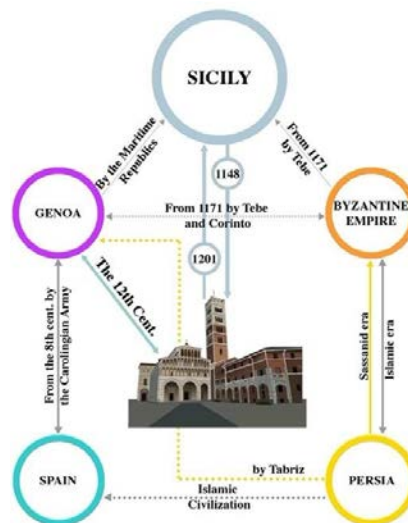
Figure 2. The various ways of transcultural exchanges in Lucca during 11th-14th centuries

Through indications of historical documents of that era, it is clear that some merchants purchased silk produced in eastern countries such as Iran and sold them in European cities such as Avignon, Antwerp, Bourgeois and London (Del Punta, 2016: 21). On the other hand, the emergence of commercial crisis in Italy in early 14th century brought about some commercial changes; so, from 1314 onwards, many weavers from Lucca started to immigrate to Florence, Bologna, Milan, and especially Venice (Degli Innocenti & Zupo, 2010: 27). Arrival of these immigrants, masters in fabric production, had a great effect in fabrics produced in Venice causing a type of cosmopolitan phenomenon in textile iconography. Nowadays, it is impossible to distinguish whether fabrics were produced in Venice or Lucca, unless there are documents to state clearly the place of production. The production of velvet in Venice was well-received in the early 14th century, and the weaving of silk with embossed flowers had great improvement in this century in Italy. These two types of fabrics (or a combination of them) are now considered as the most important types of Italian fabrics left from that century. The notable

point in these fabrics is the influence of the culture of the Far East, especially in China. Mongol Genghis Khan Conquests caused similar cultural confrontations in this century. On the other side, the Mongol empire was never ignorant of relations with western countries and was in contact with them under various titles. Marco Polo's Journey through the Silk Road and his stay in Genghis Khan Court approve the existence of such relations. Nowadays, Chinese fabric and Iranian fabrics containing Chinese iconography are kept in many churches in Italy, such as the Cathedral of Perugia in the north of Italy (Devoti, 1974: 41).

The effects of Chinese textile on Iranian and Italian fabrics

Following the conquest of Iran by Mongols, the artistic relationship between these two countries underwent major transformations. Ilkhanid art lover rulers such as *Ghazan Khan* (d. 1271-1304) and *Oljaitu Khan* (d. 1282-1316) and patrons of art in the administration such as *Rashid al-Din Fazullah* (d. 1247-1318) facilitated the prevalence of Chinese art styles in the iconographical part (Kadoi & Masuya, 2017: 636-665). There were cultural and commercial relations between Ilkhanid and their Chinese counterparts, the Yuan dynasty (r. 1271-1368). The immigration of Chinese weavers to Iran, expansion of commercial relations, and the demand for Chinese goods in Iran increased the effects of Chinese iconography in Iranian art. So, Chinese art directly influenced Iranian art, but concerning Italy, the situation was different. China never ruled this country, while the existence of commercial relations between the two countries is confirmed. After the fall of Acre by Muslims in 1291 and sanctions imposed by the Pope against Egyptian Mamluks, which remained effective until 1345, Italian merchants, staying in the Levant, were forced to expand the range of their business to other places in Asia. During Ilkhanid rule in Iran, Venetian merchants, due to conflicts with Egyptian rulers, transferred the center of their activities from Egypt to Iran, especially Tabriz city, in such a way that they operated as a commercial intermediary between Asia and Europe and exchanged Italian (or other European countries) artifacts with Chinese and Indian products including textiles produced in Iran (Mazaheri, 1994: 57). Aside from the presence of merchants from Piacenza, Venice, and Genoa, who's staying in Tabriz and Soltanieh- a city in northwestern Iran- are confirmed by the documents left from that period, Italian merchants moved toward China and by passing through present Beijing, resided in this country during the early 14th century (Petech, 1962: 563).

In addition, these influences had been expanded through the long relationships between Iran and China and the Silk Road that connected the East and the West. Chinese silk was very famous during the Mongol age, and the trade of this type of fabric was another reason for the transfer of Chinese designs and weaving principles. According to Von Falke in his book *Kunstgeschichte der Seidenweberei*, the relation between Chinese and Western textiles, which was attributed to China, was based on visual relation and by utilization of similar iconography, started by Venetian and Lucian weavers in Italy (Wardwell, 1989: 128). A century after Falke, *Anne Wardwell*, by researching the type and color of threads used in Italian fabrics of the 14th century, recommended (suggested or coined) the term *Panni Tartarici* for Islamic silks woven with gold and silver produced in Central Asia, to describe this type of fabrics. Nowadays, it's clear that this term was merely used for Chinese textiles of the Yuan dynasty in western countries, which indicates the existence of Chinese fabrics in Western countries, including Italy.

Analytical comparison between Iranian and Italian textiles effected by Chinese Iconography in the 14th century

There is a common theme of motifs and composition in Iranian and Italian Textiles from the 14th century. These works were created under the effect of Chinese art and can be studied from the following viewpoints:

Content and concept: Most fabrics left from this era in Iran and Italy contain animal and plant motifs. Utilizing these motifs which had a very long history in the art of fabric weaving in both countries, was directly influenced by China art in the 14th century. About animal motifs which are illustrated on fabrics in naturalistic or symbolic ways, it can be claimed that using these motifs-especially combined animals- and displaying them in a symmetrical form is rooted in the Sasanian dynasty (224-651), who often combined them with old symbols from territories of the west, such as rosettes and dots, to create royal or religious emblems. Thus, the "original" animal style would remain a common Eurasian reference used widely to the end of the Mongol period. One of the most common symbolic animal motif stands out is the motif of *Simurgh* that is an Iranian mythical bird, a legendary bird that was created for the first time in Sasanian art (Figure 3) and transferred to Chinese culture.

Figure 3. The Silk fragment from the Sasanian period, London, Victoria & Albert Museum, Inv. 8579-1863

In the major part of the research, this legendary animal is mentioned as a bird. There is still a discussion among scholars about whether or not it is a bird. But after transference to China, Simurgh was generally displayed as a bird. This fictional animal found a new face in Chinese textiles as the flying birds with flowers and plants placed between them (Figure 4).

Figure 4. The presence of Simurgh in a Chinese silk fragment. Chinese fabric belonging to 13-14th century, New York, Metropolitan Museum, Inv. 1973.269
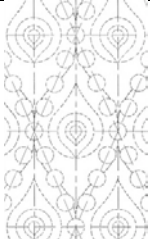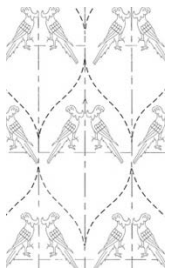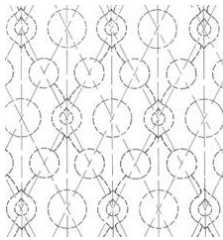
The Sasanid Simurgh is actually a legendary creature composed of several animal species, which most often includes a combination of a lion's head and legs and a bird's wings. Its tail is mostly like a volume saturated with geometric motifs, and it becomes more voluminous from the bottom to the top, and its top ends with a semicircle. This imaginary animal is shown in profile (side view) in Sasanid art, and as seen in the Victoria and Albert Museum fabric, there is a lot of empty space in the composition. Meanwhile, in the Ilkhanid period, Simurgh is a flexible and moving bird, it is shown more delicately and is mostly in different angles while flying. This new iconography was exported to Iran, Western Europe, and Italy (Figure 5). The image of this bird with open wings and tail is adopted from the textiles and culture of China (Talebpour, 2016: 135). Notably, these types of motifs were used for ornamental purposes or specific purposes (iconography). For instance, in the Islamic era, its extensive open tail is a symbol of the galaxy and universe; and it is said that its image symbolizes the incorruptibility and duality of the human soul and spirit (Alikhani et al., 2018: 61). But the use of this bird in some Italian fabrics was merely decorative.

Figure 5. Left: Iranian textile including the Chinese Simurgh, 14th century, Boston, Museum of Fine Arts, Inv. 41.495., Right: Italian fabric (woven in Lucca or Venice), including Chinese Simurgh, 14th century, Berlin, Kunstgewerbemuseum, Inv. 61.05

Composition and color: By surveying the available samples, it can be observed that animal and plant designs are moving freely on the fabrics, and they are released from the arid, predefined frames. Based on this structure, new and more modern compositions appeared. In the fabrics of this era, branches and flowers fill up fabric's surface, which originates in Chinese art. Moreover, in the field of coloring, the weavers mostly use contradictory colors for the designs and background of fabrics. In many cases, the designs are made from various colors; in rare cases, they are made of a single color in contradiction with the color of the background (See figure 4). It can be said that in this period, Italian textiles were the real transcultural exchange phenomenon. Simultaneously, in Iran and Italy, there were fabrics whose main theme was facing birds, geometric and plant patterns (Table 1). This caused this special composition to be used even in the merely decorative aspects in which no special iconography existed.

Table 1. Surveying the similarity in Iranian and Italian fabrics produced in 14th century

Number	Iranian Textiles	Italian Textiles	Similarity in content/color	Similarity in composition
1.	London, V & A museum, Inv. 1996.286	London, V & A museum, Inv. 7084.1860.	Animal-plant pattern. Using contrasting colors of the design and background. Same composition and simple repeating rhythm.	Devoti, 1974, No. 40
2.	Cleveland, Cleveland museum of art, Inv.1985.4	Berlin, Kunstgewerbemuseum, Inv. 62.90.	Animal-plant pattern. Using contrasting colors for the design and background. The presence of movement in the designs and the use of mythical plants such as lotus.	Devoti, 1974, No.34
3.	Cleveland, Cleveland museum of art, Inv.1945.34.	Florence, Museo di Bargello, Inv. 618.	Using geometric motifs to fill the background, showing birds in quarantine position. The use of plant motifs among birds. The contrasting colors of the background and the same simple design and rhythm.	Devoti, 1974, No.39
4.	London, Khalili collection, Inv. 245.	Lyon, Musée des Tissus et des Arts Décoratifs, Inv. 28492.	The use of common geometric motifs, the use of common composition and simple fabric background. The Use of framing for plant motifs.	Devoti, 1974, No.41

Fabrics with the oriental approach in Italian paintings of the 14th century focusing on Tuscany province

The fabric in Italian paintings is observable and searchable from the 13th century. Throughout the Medieval, silk production was related to church circumstances, and clergy members were among the major customers of silk products. It can be said that clergy members were practically the only customers after kings, princesses, and social high-rank personalities in the west Latin world. So, there is no wonder that in religious paintings, the presence of fabrics is abundant and noticeable. Italian art is a remarkable development, especially in Tuscany's painting in the second half of the 14th century. The common technics in that era were fresco and painting on wood. The topics are mainly religious from the Old and New Testaments, Saints' life, and in rare cases non-religious subjects. The painting passed by limited themes of Crucifix and *Maestà* and there were remarkable transformations in decorative motifs (De Vecchi & Cerchiari, 2015: 547). There are many paintings, including textiles, from this era. In Italian culture -similar to other countries- worthwhile fabrics with too many motifs were a mark of high and prestigious social level. In this era, fabrics entered into religious paintings and, in most cases, were used as a decorative element. The position of displaying these handicrafts indicates their high value. This subject was one of the appealing subjects that the writers from that age had to attract. One of the absorbing themes in this era was displaying fabrics in the painting by artists. This subject was surveyed by *Cennino Cennini* (c.1360- c.1472) who is an Italian painter in his "*The book of art*" for the first time. The most important part of this book regarding this subject is the *Sgraffito* which is notable in Tuscany (Hoeniger, 1991: 156). This decorative method involves scarping through a layer of white slip to reveal the darker clay body of the vessel beneath and, finally, covering the whole surface with a clear lead glaze. This technique was used for displaying brocades. In etymology, brocade is defined as "a rich silk fabric with raised patterns in gold and silver" (Merriam-Webster, 2018). In fact, in a piece of brocade, the fabric patterns have golden motifs (Figure 6). According to some written and historical documents, brocade weaving was highly fashionable in Iran from the Achaemenid Empire to the Sasanid dynasty in such a way that plenty of pieces were used to decorate palaces and churches over the world (Shayestehfar, 2015: 60).

Figure 6. The dalmatic of Benedetto XI imported from Central Asia; a brocade produced in the second half of 13th-first half of 14th century

The first appearances of sgraffito in paintings dated from the late Duecento and early Trecento and involved the use of the white metal leaf. Furthermore, right from the start of the painting, the technique was used to depict patterned luxury textiles. In his Annunciation of 1333 (Figure 7), Simone Martini transformed it.

Figure 7. Gabriel cloak fabric in *Annunciation* by Simone Martini with collaboration of Lippo Memmi, 1333, tempera and gold on panel, Florence, Galleria degli Uffizi, Inv. 1890 nos. 451, 452, 453

He used gold for underlying metal, exposed larger areas of the gold, and textured these areas by granulating them (Hoeniger, 1991: 160). Brunori in her thesis believed that Simone was quite acquainted with Oriental textiles and performed accurately about them (Brunori, 1989: 304). This recognition was the consequence of his relations with *Santa Sede* and Avignon courts, where several textiles (and handicrafts) were received from Mongol ambassadors in the 14th century.

This new method enabled artists to imitate textiles' qualities with far greater veracity. It is quite acceptable if other active artists in Tuscany have used this technique in their paintings. One of the same province's artists, *Maestro di Caritá*, used a fabric similar to Gabriel's clothing and was probably inspired by this clothing (Figure 8). This artist probably displayed the back part of the fabric, and the fabric background is golden. The designs are dark (Cf. Figure 4, right). This tradition was noted later in Renaissance art, and some artists have shown the back of the fabric in their works.

Figure 8. Maestro di Carita, *Madonna and Child between Angels and Saints,* tempera and gold on wood, first half of 14th century, Convento di St. Matthew, Pisa, National Museum, Inv. 1589

Another important artist, undoubtedly, is *Spinello Arentino.* He is one of the determinants of Florentine painting style at the end of the 14th century. His artistic life was formed in various cities of Tuscany province, such as Lucca, Pisa, Arezzo and Siena and due to that his style was formed by a compilation of Giotto, Lorenzetti and Andrea Pisano Works (Bresciani, 2021). In the works left from him, which are now kept in Pizza National Museum, displaying Oriental fabric using Sgraffito technic is quite obvious (Figure 9).

Figure 9. Spinello Arentino, *Incorination of Madonna*, tempera and gold on wood, the second half of 14th century, Pisa, Pisa, National Museum, Inv. S.N.

Unfortunately, except for a few cases, there is no access to the original fabrics from which the artists copied. However, similar cases can be found (Figure 10).

Figure 10. Comparison between the textile represented by Arentino and a textile fragment from Iran. Left: Spinello Arentino, *polyptych of St. John the Babtist, St. James the Great and St. Anthony the Great* (det.), tempera and gold on wood, the second half of 14th century, Pisa, National Museum, Inv. 1725., Right: Lampas with phoenixes amid undulating vines, late 1200s-1300s. Eastern Iran, Ilkhanid period, Cleveland, The Cleveland Museum of Art, Inv. 1985.4.

Arentino had two approaches toward color selection: choosing a color similar to the main color of the fabric and choosing a color based on present symbolism in Christianity. Red color bears various meanings in Christian art, but in most cases, it was used to point to Christ's material nature. This case multiplies the importance of brocades in the western world. It can be concluded that the texture of these fabrics is so attractive that artists have emphasized their presence even in paintings with religious themes. They have passed through mere imitation during the epoch under this research study and displayed fabrics with a new perspective. The same cosmopolitanism in Lucca fabric production was repeated for the painters of this period. *Agnolo Gaddi* was another artist who was contemporaneous with Arentino and was active in Tuscany. In his works, he has used golden motifs of a combination of birds and plants on a blue/green background (Figure 11) or a red/orange one (Figure 12). This point indicates that probably the artists of that era have either encountered these fabrics closely and displayed them in their works or were inspired by their contemporaneous artists.

Figure 11. Agnolo Gaddi, *Standing Madonna with Child* (det.), tempera and gold on wood, 1350-1354, Minneapolise Institute of Art, Inv. 68.41.7.

Figure 12. Presence of textiles in Gaddi's works. Left: *two elements of polypthych* (det.), tempera and gold on wood, the second half of 14th century, Pisa, National Museum, Inv. 1689/1692., Right: *Madonna of Cardinello* (det.), tempera and gold on wood, *Pieve di San Lorenzo*.

Nardo di Cione was an Italian painter, sculptor, and architect is another artist of this era who used a special textile, including determining iconography (Figure 13). This fabric contains a motif of birds facing each other and flowers and bushes between them, which can be seen abundantly in Iranian fabrics of this era also in some Italian ones (Table 1). He was an artist born in Florence (c.1320) and, according to historical documents, lived in this city all through his artistic life (Chiappelli, 1925: 567). Even though there is no information about this artist's inspiration from Italian or Iranian-Chinese fabric, the form of the birds and the fact that they are faced with each other indicates that this fabric has an Oriental origin.

Figure 13. The presence of facing birds in Nardo di Cione's works. Left: *Three Saints* (det.), London, National Gallery, Inv. NG. 581; Center: *Madonna and Child between St. Gregor and St. Hiob* (det.), tempera and gold on wood, 1365, Florence, Church of Santa Croce; Right: *Madonna and Child Enthroned with Saints Zenobius John the Baptist Reparata and John the Evangelist* (det.), tempera and tooled gold on panel, New York, Brooklyn Museum, Inv. 1995.2.

The same fabric is used in another work by *Jacope di Cione* (Figure 14). He was Nardo's brother and both of them had studied in a common artistic ambiance.

Figure 14. Jacopo di Cione, *Coronation of the Virgin*, 1372, tempera and gold on wood, 350×192.3 cm, Florence, Galleria dell'Accademia

However, by the beginning of the 14th century, the presence of fabrics in the clothing of religious characters, with extreme precision in displaying details, was very common. This point is a confirmation of their high value. In this respect, a textile, with observance of the same composition is pictured in a painting of *Andrea Orcagna* - the brother of Nardo and Jacopo- situated in Florence (Figure 15), inside the basilica *Santa Maria Novella* (Redeemer and Saints, 1357), in the clothing of Saint Catherine of Alexandria and Saint Lorenzo.

Figure 15. Andrea Orcagna, *The Strozzi Altarpiece* (det.), 1354-1357, oil on wood, Florence, Basilica Santa Maria Novella

In a general sense, it can be said that using oriental iconography turned into a common visual culture among Tuscan painters of the 14th century. But their approach toward this topic divides them into two groups: The artists of the first half of the 14th century were quite faithful to Simone's style both in color and technic, and the artists in the second half of the same century used more diverse colors and technics, which were probably originated from Spinello's style. In fact, this type of fabric displaying style converted to a unified form that artists with various colors -which can be originated from color symbolism in religious topics- displayed it.

Motifs and identical compositions in Italy, Iran, and China were used with various colors and, in some cases, slight changes in details. In this era, facing birds was a common language among Chinese, Iranian, and Italian weavers, and due to its presence in Italian paintings, it became a common point between painting and fabric weaving. The significant point in this research is meeting the universal vision and transcultural view of Italian painters in this period. Their most important works, which included religious concepts, used fabrics with Oriental iconography.

CONCLUSION

One of the most important types of Oriental art of which the signs can be traced in other places in the world is fabric weaving which contains various iconography from different eras. In the 14th century, Mongol governments with Chinese roots ruled Iran, and their style of fabric weaving, including their special iconography, influenced this industry in Iran. On the other hand, due to the presence of Italian merchants in Iran and the fame of the Raw silk produced in the East, a big part of this valuable material was transferred to Italy during this period. So, the marks of Iranian iconography are observable in Italian fabrics of that time. By the comparative study of this Italian art in the 14th century, it can be seen that the iconography of Italian fabrics combines Chinese signs and Iranian composition under the influence of Italian art. Free strap composition, using mythical birds and geometric motifs with ancient origin from the Sasanian period, and using contradictory colors, are among them. So, this means the evolved and changed forms of Chinese textiles in Italy have traces of Iranian art and fabrics.

Due to the fact that textile was considered a valuable commodity in Italy, they attracted the attention of many painters of the Tuscany province - who were at the peak of their development at that time - and the display of fabric in painting became a kind of common tradition. So, studying iconography in Italian fabrics in the 14th century, aside from the samples left in museums, is also possible by studying the painting illustrating these fabrics. Based on the surveys, it can be concluded that fabric was a phenomenon rather than a commercial item in that century and created a kind of cosmopolitanism. This means an Italian artist in a work on the topic of Christian religion used a fabric with Oriental iconography. Generally, the artists active in this field are divided into three groups: First, artists such as Simone Martini, who probably have encountered brocades produced in Central Asia. Second, artists like Agnolo Gaddi used fabrics with green and blue backgrounds. Probably, they had seen fabrics produced during the Ilkanid in Iran and used them as their source of inspiration. Moreover

third, artists used fabrics with a red and orange background, following Spinello Arentino's style. Probably the third group did not deal with any fabric, and their source of inspiration was other artists' paintings.

Authors' Contributions

The authors contributed equally to the study.

Competing Interests

There is no potential conflict of interest.

Ethics Committee Declaration

This study does not require ethics committee approval.

REFERENCES

Alikhani, F. P., Akbari, F., Ebrahimi, A. (2018). Comparative study of mythical birds in Iran and neighbor civilizations, case study: Sēnmurw & Phonix. *Glory of Art (Jelve-y Honar) Alzahra Scientific Quarterly Journal, 10*(2), 55-66. https://doi.org/10.22051/JJH.2017.10522.1127

Allsen, T. T. (1997). *Commodity and exchange in the Mongol empire: A cultural history of Islamic textiles*. Cambridge University Press.

Ashrafi, A., Mirjafary, H. (2015). Backgrounds for the creation of artistic school in Timurid Age in Herat and transfer of its heritage to the Safavid era. *Scientific Journal of History Research*, *5*(18), 1-16.

Brunori, M. (1989). *Tessuti nella pittura Due-Trecentesca del Museo Nazionale di Pisa* [Doctorate in History of Decorative Art, University of Pisa].

Dashdondog, B. (2010). The Mongols and the Armenians. In M. R. Drompp, & D. DeWeese (Eds.). *The Mongols and the Armenians 1220-1335* (pp. 121-142). Brill's Inner Asian Library. https://doi.org/10.1163/9789004192119

Daylan, D. (2019). The origin of silk production. *Silk-Road Universities Networks Online Magazine, 1*, 1-4.

Degli Innocenti, D., Zupo, M. (2010). *Seta ad Arte: Storia e tecniche dell'eccellenza Toscana*. Fondazione Cologni.

Del Punta, I. (2016). *Lucca e il commercio della seta nel Medioevo*. Pacini Editore.

Del Punta, I., Rosati, M. L. (2017). *Lucca una città di seta. Produzione, commercio e diffusione dei tessuti lucchesi nel tardo Medioevo*. Pacini Fazzi.

De Vecchi, P. L., Cerchiari, E. (2015). *Arte Nel Tempo*. Bompiani.

Devoti, D. (1974). *L'arte del tessuto in Europa.* Bramante.

Guarnieri, M., Del Negro, P. (2019). The Italian Renaissance: Transition from Medieval to Early Modern Europe of the university system and higher learning. In G.C. Sih, & A.Q. Li (Eds.). *Higher Education in Science and Engineering*. Global Scientific Publishing Company.

Hoeniger, C. S. (1991). Cloth of gold and silver: Simone Martini's techniques for representing luxury textiles. *Gesta*, *30*(2), 154-162.

Jacoby, D. (2004). Silk economics and cross-cultural artistic interaction: Byzantium, the Muslim world, and the Christian west. *Dumbarton Oaks Papers*, 58, 197-240.

Jensen, L., Allen, M. (1996). Meta-synthesis of qualitative findings. *Qualitative Health Research, 6*(4), 553-560.

Kadoi, Y., Masuya, T. (2017). Chinese and Turko-Mongol Elements in Ilkhanid and Timurid Arts. In Barry Flood, F, & Necipoğlu, G (Eds.). *A Companion to Islamic Art and Architecture*. John Wiley & Sons, Inc.

Kamaroff, L., Carboni, S. (2004). *The legacy of Genghis Khan: Courtly Art and culture in Western Asia, 1256-1353*. NewYork, Metropolitan Museum of Art.

Klesse, B. (1967). *Seidenstoffe in der italienischen Malerei*. Schriften der Abegg-Stiftung Bern.

La'l Shateri, M., Rajabi, M. A. (2016). Cloth-weaving in Timurid period (Case study of the cloth used in decoration of the tents of the ṭoy ceremonies). *Journal of History and Culture*, *48*(1), 73-96. https://doi.org/10.22067/history.v0i0.54263

Manz, B. F. (2007). *Power, politics and religion in Timurid Iran*. Cambridge University Press.

Mazaheri, A. (1994). *The silk road*. Elmi Farhangi Press.

Merriam-Webster. (n.d.). Brocade. In *Merriam-Webster.com dictionary*. https://www.merriam-webster.com/dictionary/brocade (18.09.2022).

Ni, J., Kaner, J. (2020). The evolution of Iranian Carpet designs with the influence of Islam and Chinese art; Ilkhanid, Timurid, Safavid. *Journal of History Culture and Art Research*, *9*(1), 494-506. https://doi.org/10.7596/taksad.v9i1.2560.

Petech, L. (1962). Les marchands italiens dans l'empire mongol, *Asiateque*, 250, 549-574.

Poloni, A. (2017). L'economia lucchese nella seconda metà del Trecento. In B. Figliulo, G. Petralia, & P.F. Simbula (Eds.). *Spazi economici circuiti commerciali nel Mediterraneo del Trecento* (pp. 107-121). Centro di Cultura e Storia Amalfitana.

Pubblici, L. (2007). Dal Caucaso al Mar d'Azov: l'impatto dell'invasione mongola in Caucasia fra nomadismo e società sedentaria (1204-1295). In L. Pubblici (Ed.). *Dal Caucaso al Mar d'Azov*. University of Florence Press.

Rosati, M. L. (2010). Migrazioni technologiche e interazioni culturali. La diffusione dei tessuti orientali nell'Europa del XIII e del XIV secolo. *OADI*. https://doi.org/10.7431/RIV01022010

Schrato, U. (1959). Ilkhan Art. In B.S. Myers, & Sh. D. Myers (Eds.). *Encyclopedia of World Art* (pp.788-798). McGraw Hill.

Shayestehfar, M. (2015). A comparative study of brocade weaving art motifs and designs in Iran and Malaysia. In Omar, R., Bahrom, H., de Mello, G. (Eds.). *Islamic perspectives relating to business, arts, culture and communication*. Springer, Singapore. https://doi.org/10.1007/978-981-287-429-0_6

Talebpour, F. (2016). *The history of Iranian textiles*. Alzahra University Press.

Von Falke, O. (1913). *Kunstgeschichte der Seidenweberei*. Verlag Ernst Wasmuth A.G.

Vosoughi, M. B., Soleymani, M. H. (2013). The textiles of the Mongol era based on the Manuscript of Al-Morshed fī al-hisāb'. *Historical Sciences Studies*, *5*(1), 175-193. https://doi.org/10.22059/JHSS.2013.36040

Wardwell, A. E. (1989). *Panni Tartarici: Eastern Islamic Silks woven with Gold and Silver (13th and 14th centuries)*. Bruschettini Foundation for Islamic and Asian Art.

Figure References

Figure 3: Victoria and Albert Museum. 7th century to 8th century. *The Sēnmurw Silk*. Victoria and Albert Museum. https://collections.vam.ac.uk/item/O85315/the-sēnmurw-silk-woven-silk-unknown/ (10.06.2022).

Figure 4: The Metropolitan Museum of Art. 13th-14th century. *Textile with Phoenix, Winged Animal and Flowers*. The Metropolitan Museum of Art. https://www.metmuseum.org/art/collection/search/39729 (10.06.2022).

Figure 5: Museum of Fine Arts. Second half of 14th century. *Fragment with paired phoenixes in* vines. Museum of Fine Arts. https://collections.mfa.org/objects/47224/fragment-with-paired-phoenixes-in-   vines?ctx=35c65961-4f48-4650-ab6e-60c9ab2ed54f&idx=0 (20.06.2022).

Figure 6: Devoti, D. (1974). *L'arte del tessuto in Europa*. Bramante. p. 53.

Figure 7a: Victoria and Albert Museum. 1330-70. *Woven Silk*. Victoria and Albert Museum. https://collections.vam.ac.uk/item/O260607/woven-silk-unknown/ (20.06.2022).

Figure 7b: The Metropolitan Museum of Art. Second half 13th-14th century. *Textile Fragment*. The Metropolitan Museum of Art. https://www.metmuseum.org/art/collection/search/453371 (20.06.2022).

Figure 8b: The Cleveland Museum of Art. 1300s. *Fragment*. The Cleveland Museum of Art. https://www.clevelandart.org/art/1945.34 (12.06.2022).

Figure 9: Simone Martini and Lippo Memmi. 1333. *Annunciation with St. Margaret and St. Ansanus*. Le Gallerie Degli Uffizi. https://www.uffizi.it/en/artworks/annunciation-with-st-margaret-and-st-ansanus (21.06.2022).

Figure 10: Umberto Maiorca. 11 Decembre 2019. *I Papi a Perugia, nasce il museo dedicato a Benedetto XI e tornano a splendere gli affreschi di Cola Petruccioli.* Perugia Today. https://www.perugiatoday.it/foto/cronaca/apre-il-museo-dedicato-a-papa-benedetto-xi/#parato-bxvi.html (21.05.2022).

Figure 13: Right: The Cleveland Museum of Art. Late 1200s-1300s. *Lampas with phoenixes amid undulating vines.* The Cleveland Museum of Art. https://www.clevelandart.org/art/1985.4 (21.06.2022).

Figure 15: Nardo di Cione. 1363-65. *Saint John the Baptist, Saint John the Evangelist (?) and Saint James.* The National Gallery. https://www.nationalgallery.org.uk/paintings/nardo-di-cione-three-saints (21.06.2022).

Figure 16: Right: Nardo di Cione. Mid-14th century. *Madonna and Child Enthroned with Saints Zenobius, John the Bptist, Reparata and John the Evangelist.* Brooklyn Museum. https://www.brooklynmuseum.org/opencollection/objects/4963 (12.06.2022).

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