Journal of
Design Studio
v:4 n:2 December 2022

Vertical Design Studio in Architectural Education: A Summer Practice on Corner Parcel

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Received: September 27th 2022, Revised: November 15th 2022, Accepted: November 18th 2022
Refer: Tuztasi, U., Koc, P., (2022), Vertical Design Studio in Architectural Education: A Summer Practice on Corner Parcel, Journal of Design Studio, V.4, N.2, pp 163-177,
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DOI: 10.46474/jds.1180916 https://doi.org/10.46474/jds.1180916

Abstract: This study discusses the experience of a vertical studio implemented at SCU Department of Architecture. The goal of such an experiment is to open channels of interaction in the studio and activate peer learning. This vertical studio, which was carried out within the scope of the 2021-2022 academic year summer school, includes three different project groups from the second, third and fourth grades. Studio participants with different individual experiences were presented with a main theme focusing on 'corner' concept. To diversify contextual openings, four different definitions of 'corners' in urban space were developed, and students were free in terms of space selection, architectural program and other design dynamics. While producing projects in the studio around 'corner' comprehension, the studio process was observed in terms of activities such as interaction, dialog, collaboration and peer learning. As a result, it was determined that the understanding of dialog and collaborative work for discussing the main theme and/or design decisions has not yet been established, while at the same time it has been understood that vertical studio is a practice that eliminates class-level boundaries and makes the studio open and accessible.

Keywords: Architectural education, Corner parcel, Corner building, Design, Vertical studio.

1. Introduction

The backbone of architectural education in the world and in our country is architectural design studios. In many schools of architecture, studio culture is shaped by different factors, and the form of the educational format in particular transforms the studio into a 'new/unusual/strange' world for architecture students. Within architectural education, studio practices are organized as 'horizontal' and 'vertical' in terms of format. In horizontal systems, design studio is comprised of the students from the same year, with the same skills, knowledge and experiences while the vertical studio includes mixed-level students, with diverse skills, knowledge and experience (Smatanová et al., 2020). The practice widely used in architecture schools in our country is mostly horizontal studio and vertical studio can be applied in a limited way. The main difference between the horizontal and vertical studio is undoubtedly the coexistence of groups of students of different years and levels. This is an educational format that directly allows concepts such as interaction, dialog, collaboration and peer learning in the studio and transforms the design studio.

In Sivas Cumhuriyet University (SCU) Department of Architecture, which started architecture education with an additional quota in 2014, architectural design education is

widely carried out through horizontal studio setup. Increasingly, this has led to a result that reduces interaction and peer learning in the studio. The aim of this research is to develop a vertical studio setup in SCU Department of Architecture Architectural Design Studios and thus to increase the efficiency and practice diversity of design studios by incorporating concepts such as interaction, dialog, collaboration and peer learning into the studio. For this purpose, in the studio courses opened within the scope of the summer school in the 2021-2022 academic year, it was designed as a vertical studio and thus, a pre-trial phase was carried out for the vertical studio experience in SCU Department of Architecture. The groups of Architectural Project IV, Architectural Project VI and Architectural Project VIII who applied to the summer school were the first participants of the vertical studio. The method consists of creating new groups by blending students from different years and different levels and giving architectural design education to these groups through different contexts within the same conceptual framework. The main hypothesis of the research is based on the fact that the vertical studio will open the channels of peer learning and interaction, diversify the existing studio culture, and beyond these, produce an alternative pedagogical scenario in terms of architectural design education. In short, an experiment on vertical studio was carried out with the summer school experience at SCU Department of Architecture, which has been continuing education with horizontal studio setup since 2014.

2. Theoretical Framework: Studio Culture and Vertical Design Studio

As mentioned, the aim of the study is to perform a vertical studio experience in architectural design education and to measure peer learning and interaction in the studio in this experiment. In this context, the study is based on two main reasons, the first of which is related to the relational expansions of architectural design studios where architectural education is provided, while the second reason, in particular, is related to the more active architectural design studios of SCU Department of Architecture. More precisely, the first justification for the study is that architectural design studios are mostly realized with horizontal studio setup, and this leads to a process that reduces/restricts the dialog, interaction and sharing between students over time. As a result, architectural design studios are shaped by a result-oriented trend rather than process-oriented. The result-oriented form of training not only leads to the monotony of the studio, but also pacifies the participation of studio actors, preventing actors from taking on different roles. Therefore, this situation turns into a cycle that not only affects the periodic studio practice, but also breaks the connection between different studios. In line with this justification, experiencing a vertical studio setup can be seen as an effective process to reframe architectural design studios and reveal the process-oriented aspects of architectural education. This correlation forms the basis of the second justification of the study, which is to bring mobility to the architectural design studios in SCU Department of Architecture. Although SCU Department of Architecture offers diversity in terms of conceptual content and actuality, the topics covered in design studios do not offer competence in terms of connections between different studios. To put it more clearly, it has been observed that the project topics in the studio cannot be internalized sufficiently by the students and that there are breaks in the design/planning processes. In light of these findings, it is aimed to bring together students of different years and levels through the vertical studio and to internalize the learning cycle by taking on different roles of studio participants through peer learning. The objectives that support the theoretical infrastructure of such a vertical studio experience through a summer school are listed below:

- To transform the means of discovery and understanding in the architectural design studio,
- To make the architectural design studio more resistant to different conditions,
- To place the design/planning concern in the student through design exercises,
- To make the architectural design studio process-oriented,
- To activate peer learning in the studio,

- To improve dialog and sharing between studio actors by increasing interaction in the studio.

From the point of view of architectural design education and studio culture, these aims are generally designed to improve the studio environment. A study by McLaughlan and Chatterjee (2020) presented five strategies for improving studio learning, which in turn are as follows:

1. "A challenge was set up that explicitly positioned the role of the student within it,
2. A clear structure supported workflow and reflective practice,
3. Expectations around performance were clearly communicated but included flexibility for higher performing students,
4. A strong peer culture,
5. Expectations were kept high (McLaughlan & Chatterjee, 2020, p. 553)."

The above strategies presented with the aim of improving the studio environment and group success have been developed in accordance with the unpredictable position of architectural practice. On the other hand, the charter (UNESCO-UIA Charter for Architectural Education, Revised, 2017 Edition) created by UNESCO and UIA for architectural education is of universal value in terms of presenting both the objectives of architectural education and the conditions of an accredited architecture school. Accordingly, one of the objectives of architectural education is to develop the capacity of students to conceptualize, design, understand and realize the act of building within the context of architectural practice that balances the tensions between emotion, intellect and intuition and gives physical form to the needs of society and the individual (UNESCO-UIA, 2017). Architecture, at this point, is placed in a position closely related to designing a world of life. One of the conditions of a school accredited according to the same charter is that the individual project work carried out through direct dialog between the instructor/student forms the basis of the learning process; moreover, the continuous interaction between architectural learning and practice should be encouraged, and the design project must be a synthesis of acquired knowledge and accompanying skills (UNESCO-UIA, 2017). These two articles provide an opening that is directly related to the studios where architectural design education is given and make suggestions for managing the content and process of the training. However, the main point that is definitely pointed out by these two items is the environment in which the training is given, that is, the architectural design studios.

According to Çağlar and Sönmez (2009), the architectural design studio has four components: studio/workshop space, know-how, pedagogical/educational approach and methodological approach. Among these, the pedagogical approach and the methodological approach point out an environment based on activities such as content production and process management. As stated by Van Dooren et al. (2018), the studio plays a central role for architectural education, and the student learns by doing through the design exercises he or she has experienced. Although learning by doing is the primary core of design education, designing, managing, and executing the process in the studio also means coordinating the design process. This also leads to the formation of a distinct studio culture and, increasingly, allows this culture to be established. Researchers call this the epistemic culture of architecture, quoting from Kurath (2015) and Knorr Cetina (1999), and this phrase marks the medium in which design knowledge is produced; this environment, in which design knowledge is produced, includes skills and intuition, as well as forms of knowledge and orientation to non-linear working processes. Of course, this is not only an understanding of the horizontal and vertical construction of the studio, but also implies the existence of an environment that includes multi-component catalysts such as epistemic culture, method, tool and process and is shaped by more inclusive dynamics. In fact, horizontal and vertical studio fiction, at some point, refers to a situation closely linked to the management of the design process.

In the general literature, the design and/or design process is often defined as a cyclical process consisting of various intertwined steps

or connections. For example, according to Michels and Meeus (2013), designing in architecture is the intertwined state of generating ideas and making choices, and the most important aspect of designing is that appropriate interpretations are made before making choices. Similarly, designing is read as a series of interconnected steps, and the process is recognized as moving from vague ideas to specific definitions (Schaeverbeke & Heylighen, 2013). This cyclical and intertwined process forms an important part of the studio culture in which design knowledge is produced. Often characterized by an easily unexplained content, the design process embodies the basic determinant and dominating aspect of both learning by doing and studio culture. In this regard, Van Dooren et al. (2014) have established a set of concepts that can be called a kind of dictionary to make the design process understandable. This set, called "generic elements", is defined as a) Experimenting or exploring and deciding, b) Guiding theme or qualities, c) Domains, d) A frame of reference or library, e) Laboratory or (visual) language, which do not provide any recipe for the design process, nor do they provide a fixed sequence to follow step by step; on the contrary, "generic elements" are general qualities and are intertwined with each other (Van Dooren et al., 2014). These 'generic elements' that shape/manage/organize the design process mark the environment in which design knowledge is produced in terms of studio culture. Thus, it helps to solve issues such as what students need in the architectural design studio, as well as where they are blocked and/or how they should be directed in terms of the way they are educated.

On this axis, the idea of bringing mobility to architectural design studios or the concern to increase interaction between studios stands as a dominant starting point in SCU Department of Architecture. Instead of the current studio operation organized with a horizontal setup, a summer school on the vertical studio was experienced to open the points where the students were stuck and to overcome the interaction difficulties. Since the vertical studio promotes, encourages and advances an interrelated relationships between students of all years, the studio setup extends beyond the practical needs and, it enables to develop new learning settings (Giencke, 2021). On the other hand, the vertical studio, which was experienced for the first time in SCU Department of Architecture, is applied in other architecture schools either as an educational format or as an experimental method. For example, Çağlar and Uludağ (2006) share a vertical studio experience they realized at *Atelier One* in one of their works. Accordingly, the authors indicate that the students aim to develop their designs through concept formation; while the first stage includes the understanding of the architectural problem and the generation of ideas, the second stage focuses on the environmental characteristics of the project area (Çağlar & Uludağ, 2006). The process was completed by bringing together four different project groups consisting of 2nd, 3rd and 4th grades in the same design studio under a main theme, developing original programs related to the project area and jury. Although the study reported that sizes and intensities may vary between different project groups facing the same environmental problems; the authors emphasized that this studio is process-oriented and the importance of changing pedagogical practices (Çağlar & Uludağ, 2006).

In another study, Akalın and Sezal (2009) explained in detail the vertical design studio model applied in Gazi University Department of Architecture and then shared their *Atelier Two* experiences. *In Atelier Two,* a main theme was created and projects were identified that were more difficult for the upper classes, starting with the less complex one for the lower classes (Akalın & Sezal, 2009). The process consists of preparation, progress 1 phase, progress 2 phase and final phase; equivalent project groups with at least one second, third- and fourth-year student in each group are working on the field analysis and architecture program during the preparation phase. In the Progress 1 phase, students were encouraged to work with conceptual sketches and conceptual models simultaneously, and in the Progress 2 phase, drafts and concrete models related to the

program were practiced. In the study, the authors indicated that since each project was given under a main theme, students in different years worked together in the classroom, ideas were shared and this was the best advantage of the vertical design studio (Akalın & Sezal, 2009).

Finally, a study that conveys the vertical studio experience in interior design education will be shared. Özbek et al. (2018) reported their vertical studio experiences similar to the above works. In the vertical studio, which brings together three different project groups, a process in which the design, existing building and spatial scale are the same, while in the studio, the design problem, space size and detail scale are planned according to the project groups. In the study where studio outputs were shared; vertical studio gains were transferred. Accordingly, in the study, it was stated that the fact that students in different periods shared the same studio strengthens the encounter and dialog between students; in addition, thanks to the rapid progress of experienced students, other students gained momentum and motivation. In addition, it was stated in the study that a common learning platform emerged among the students thanks to the project presentation of the upper-level students and the sharing of their computer software experiences with the lower-level students (Özbek et al., 2018). In addition to these national experiences, there are also some international practices of the vertical studio which implemented in the departments of architecture, interior design and graphic design. For example, Smatanová et al. (2020); Giencke (2021); Peterson and Tober (2014) revealed their experiences of the vertical studio. Mixed-level students, common theme, peer learning, collaboration and interaction were mainly emphasized in that studies. In short, the experiences gained with vertical studio practices mark a process that leads to an increase in activities such as sharing, interaction, collaboration and dialog in the studio. In this context, the experiences gained through the 2021-2022 summer school at SCU Department of Architecture are presented below.

3. Pedagogical Approach and Studio Setting/Setup

This vertical studio practice was carried out as a summer school practice opened at the end of the 2021-2022 academic year at SCU Department of Architecture. In this practice, there are 3 studio groups: Architectural Project IV, Architectural Project VI and Architectural Project VIII. Architectural Project IV group consists of 8 people, and all participants are students of architecture schools other than SCU. The Architectural Project VI group consists of 32 people and only 4 of the participants are students of architecture schools other than SCU. The Architectural Project VIII group, in which all participants were from SCU Department of Architecture, was carried out with 17 people. In addition, one of the purposes of the vertical studio experience in the summer school is the small number of students and the easy controllability of the process. In short, this summer school experience has been considered a kind of pre-trial phase for the vertical studio.

In the summer school of SCU Department of Architecture, vertical studio practice was experienced with two basic characteristics. The first characteristic of the vertical studio is the bringing together of different project groups and students of different levels. The second characteristic is the realization of design research that will enable different contexts to be defined within the same conceptual framework. Accordingly, the main concept that will frame the vertical studio is the conception of corner parcel and corner building. In the first lesson of the summer school, the subject and conceptual expansion were defined. Student groups of all architectural projects were brought together and visual presentations focusing on the 'corner' conception were realized. The presentations were conveyed by the studio coordinators, that is, the authors of this article, with the content of narrative/interpretation/analysis in a format appropriate to the theoretical course content of the studio practice, and this process corresponds to a time frame of approximately 8 hours. In summary, the concept of ‘Corner’ is the main theme of the vertical studio and accordingly, four ‘corner’ conceptions have been developed:

1. The definition of ‘corner’ emphasizing the intersection of a street and/or road,
2. The definition of ‘corner’ that establishes a dialog with important historical buildings in urban space,
3. The definition of ‘corner’ that limits important spaces such as squares in urban space,
4. The definition of ‘corner’ that makes the whole parcel valuable due to its location.

In accordance with this approach, which describes the 'corner' conception, students were directed to field work. They have chosen a suitable area for any of the ‘corner’ conceptions described above in the city center of Sivas and/or in the immediate vicinity in the hinterland of the city center. Although each student acted in a free environment in terms of space selection, function, and other design dynamics, the only element that set limits on the vertical studio was the scale between the different project groups. More specifically, the student’s individual experience and the level of the project group determined the design character and design behaviors. The method evolved from the point of view of the educator and the student to discover the competencies and weaknesses of the process. Thus, a pre-trial phase on the vertical studio was carried out in SCU Department of Architecture, and the relations between the project groups were resolved.

4. Findings and Discussion

As mentioned above, the vertical studio implemented as a pre-trial practice within the scope of the summer school is based on a conceptual design theme. For a design cycle that makes it easier to manage the way it is implemented, its method, tools and process, and to reframe the studio, when necessary, it is a conscious choice to have the subject matter in a comprehensible objective theme. The implementation of the training program in a short period of time such as 5 weeks in total is also an important input in the choice of theme. In this context, the ‘corner’ space problem, which is seen as a design problem that overlaps the urban scale and the single building scale as the main theme of the vertical design studio, also includes a limiting spatial pattern. It should be noted at once that in terms of the process and outcome of the vertical studio, this has led to a position that partially affects the studio dynamics. The problem of ‘corner’ space through the studio was addressed by students of different years and different experience levels, and students completed the process by following similar design tactics in four different ‘corner’ concepts of their choice in urban space. The dynamic that changed between students and in the vertical studio process was the designs they developed in the scale and program appropriate to the level of the student in the different year. In the vertical studio, activities such as behavior in terms of design in terms of the path to the end product rather than the end product, individual experience, internalization of design concern, establishment of collaborative working culture, interaction, dialog and peer learning were followed. Below, the project outputs of the vertical studio are shared, and the learning outcomes on the experiences gained from the studio are discussed.

4.1. Projects produced within the scope of the definition of ‘corner’ emphasizing the intersection of a street and/or road

‘Corner’, which emphasizes the intersection of street and/or road, means a parcel where the roads directly intersect and offers an angled surface in terms of location. Due to the general belief that it is easy and comfortable to work in such ‘corners’ in urban space, projects have been developed on this ‘corner’ concept in the vertical studio. In this context, the project developed by a second-year student (Erdinç Koç) is on Atatürk Street, and the architectural program is shaped as a psychological counseling center. To emphasize the ‘corner’, the student made use of prismatic bodies in the design and their angled placement and dimensional alteration. The planimetric organization of mass is rationally arranged, and the ‘corner’ conception has not evolved into a strong spatial order that feeds the interior. But the ‘corner’ is clearly highlighted as the structural shell. (Figure 1).

Figure 1: *The project produced by a second-grade student (Erdinç Koç).*

A student from the third year (Cansel Şahin) chose a 'corner' parcel where Rahmi Günay Street and Mevlana Street intersect as the project area. The student worked on business center design as an architectural program. In this project, which offered a compact mass assembly, the 'corner' was shaped by summoning structural components that emphasize its presence. The 'corner' evolved into a design element that separated the compact mass assembly from each other and partially created space in the urban space (Figure 2).

A fourth-year student (Özge Köse), who worked on the same definition of 'corner', worked on Arap Şeyh Street, which cuts perpendicular to Atatürk Street. The 'corner' conception developed by the student was shaped through a highly introverted, compact and rational mass, while the interior layout of the project was organized with a planning detached from the 'corner' conception.

Functioned as a hotel, the project sought to alleviate its massive density with prismatic

Figure 2*: The project produced by a third-grade student (Cansel Şahin).*

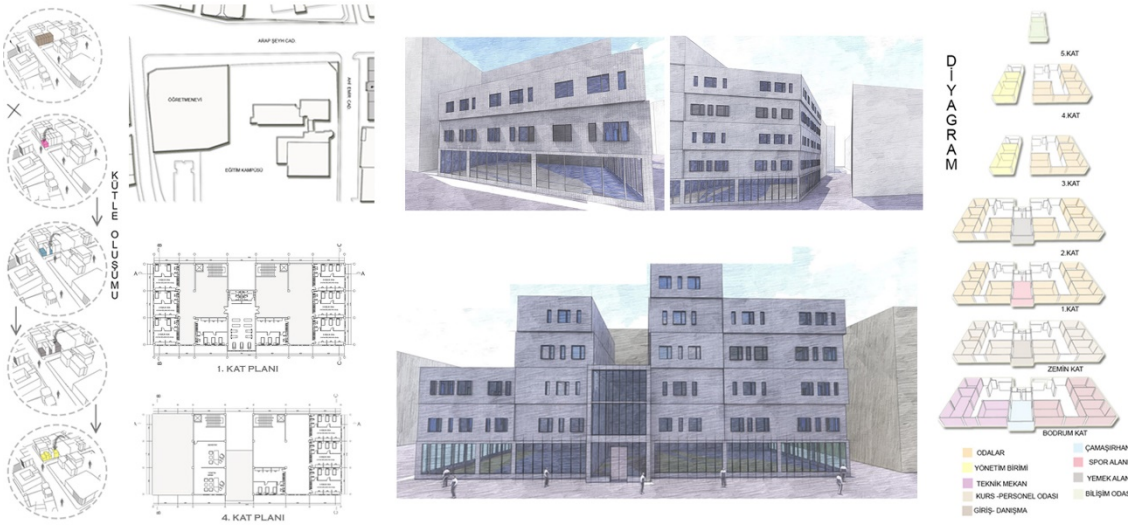

***Figure 3**: The project produced by a fourth-grade student (Özge Köse).*

bodies decreasing and increasing in height (Figure 3).

4.2. Projects produced within the scope of the definition of 'corner' that establishes a dialog with important historical buildings in urban space

The definition of 'corner', which establishes a dialog with important historical buildings in urban space, means a parcel that is located in the immediate vicinity of historical buildings due to their location and offers a direct or partial perspective to historical buildings. This definition includes small-scale historical buildings that are located not only in the context of monumental structures, but also between neighborhoods. In this context, the project developed by a second-year student (Oğuz Boran Kuzu) was realized on a 'corner' parcel in dialog with Alibaba Mosque. The chosen area is also close to the Aşık Veysel Monument, and these urban layers determined the architectural program. Accordingly, the project, which was designed as the Ashik' Center, is shaped by simple deformations of the prism of rectangles. In the project, both to emphasize the 'corner' and to provide a reference to the Alibaba Mosque, a cubic mass movement was created in the direction facing the Alibaba Mosque protruding from the main body (Figure 4).

***Figure 4:** The project produced by a second-grade student (Oguz Boran Kuzu).*

The project, developed by a third-year student (Ceren Çabuk), was carried out on the parcel adjacent to the Zincirli Minaret Mosque. The project area, together with the mosque, offers a definition of a 'corner'. The mass shaping was carried out in accordance with the horizontal extension of the parcel bounded by the mosque. The mass, created by the strong deformation of a prism of rectangles, functioned as a hotel. In the project, the emphasis of the 'corner' and its dialog with the historical structure were provided through the splits in the main body, angled layout and connections (Figure 5).

Working on the same definition of 'corner', the fourth-year student (Emrullah Geçit) worked on a parcel located on Atatürk Street around important historical buildings such as Subaşıhan, Taşhan and Ziyabey Library. The project, which was designed as a business and life center, evaluated the existing commercial potential of the area as a design input. Designed in the form of a prism of rectangles that were formally rational and held the 'corner', the mass designed spaces such as courtyards to reference the historical buildings in its immediate vicinity and open areas with arches at ground level to meet the commercial potential of the area. The mass of transparent surfaces highlighted the 'corner' in the form of a strong horizontal extension through gradations in the main body (Figure 6).

Figure 5: *The project produced by a third-grade student (Ceren Çabuk).*

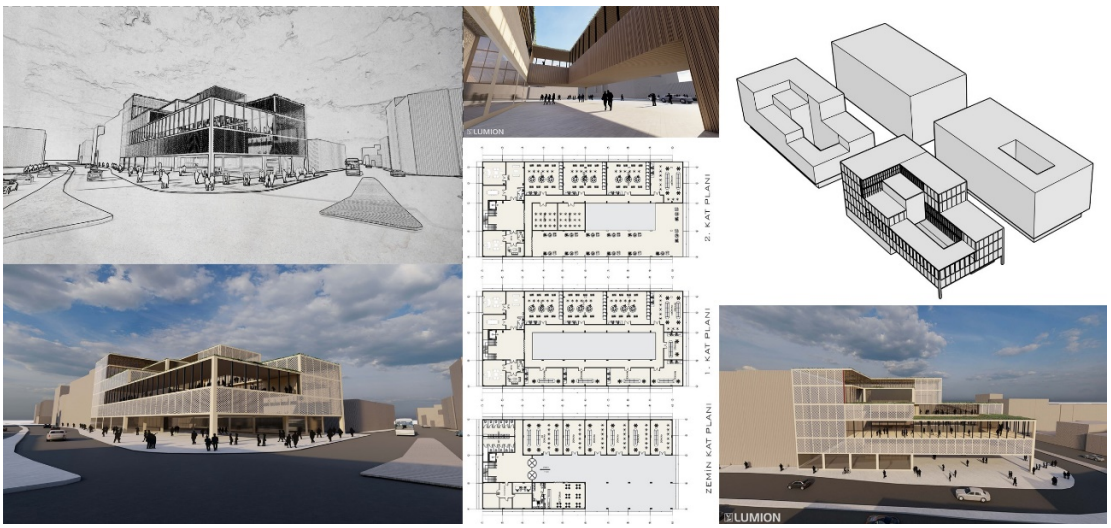

Figure 6: *The project produced by a fourth-grade student (Emrullah Geçit).*

4.3. Produced within the scope of the definition of 'corner' that limits important spaces such as squares in urban space

The definition of 'corner', which limits important spaces such as squares in urban space, means that the parcel is opened directly to the square. This means working with a space in the urban space that has both circulation intensity, diversity in functional layers and public connotations. Such a field scale was not preferred by second graders. On the other hand, the project developed by a student from the third grade (Merve Demir) in this context was realized at Mevlana Junction. Due to both the opening of the field to a square and its topographic condition, the mass was completed directly with a formation that would emphasize the 'corner'. The mass formation, which heads towards the square and draws the boundary of the square, functioned as a student dormitory with a compact and introverted organization (Figure 7).

The project, developed by a fourth-year student (Saliha Mutlu), was designed as a work and life center in Mevlana Junction. The project was located in accordance with the topographic conditions in terms of its positioning and formal configuration. Mass formation was handled by a design behavior that limited the square, opened to the square and established permeable contacts with the square. The density of the structure was alleviated through gaps and passages, while the 'corner' emerged as a permeable public surface between the interior and exterior (Figure 8).

Figure 7: *The project produced by a third-grade student (Merve Demir).*

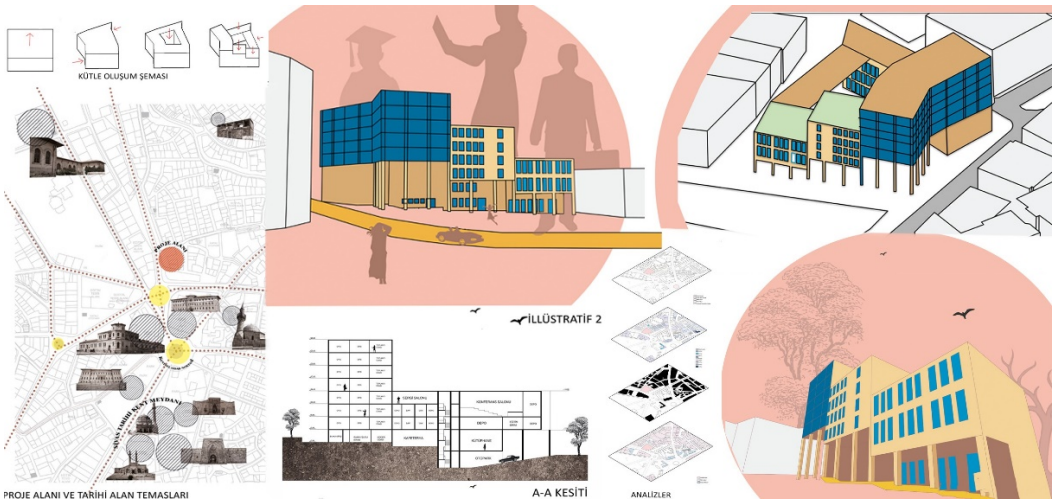

Figure 8: *The project produced by a fourth-grade student (Saliha Mutlu).*

4.4. Produced within the scope of the definition of 'corner' that makes the whole parcel valuable due to its location.

The definition of 'corner', which makes the whole of the parcel valuable due to its location, means the parcel where the space is understood in the whole area without any structure adjacent to it, even if there is a building or building groups in its neighborhood. In this context, the project, developed by a second-year student (Ali Berat Arslan), was carried out in a longitudinal rectangular area between the building and the road in the urban space. The project, which functioned as a youth center, was created by integrating prisms of different sizes and shapes into each other through gaps, bridges and stairs. In the project, the emphasis on the 'corner' was provided by means of retaining and integral prismatic bodies (Figure 9).

The project, developed by a student from the third grade (Fazlı Yücel), was carried out in the area on Sait Paşa Street that is currently used as bus stops. The project, which functioned as a work and life center, was located on a longitudinal rectangular parcel. To emphasize the 'corner' in the project, a lower layer holding the ends of the parcel was studied. The lower layer, which revealed holistic structural relationships in the two corners of the parcel, was fragmented by gaps in the middle line and semi-open spaces and transitions were formed. In the mass order, the upper layer was shaped in accordance with the functional decomposition brought about by the architectural program. Although the mass created a wall effect when viewed from the street, the rhythmic movements of the building body, the gaps and the 'corner' lines balanced the massiveness (Figure 10).

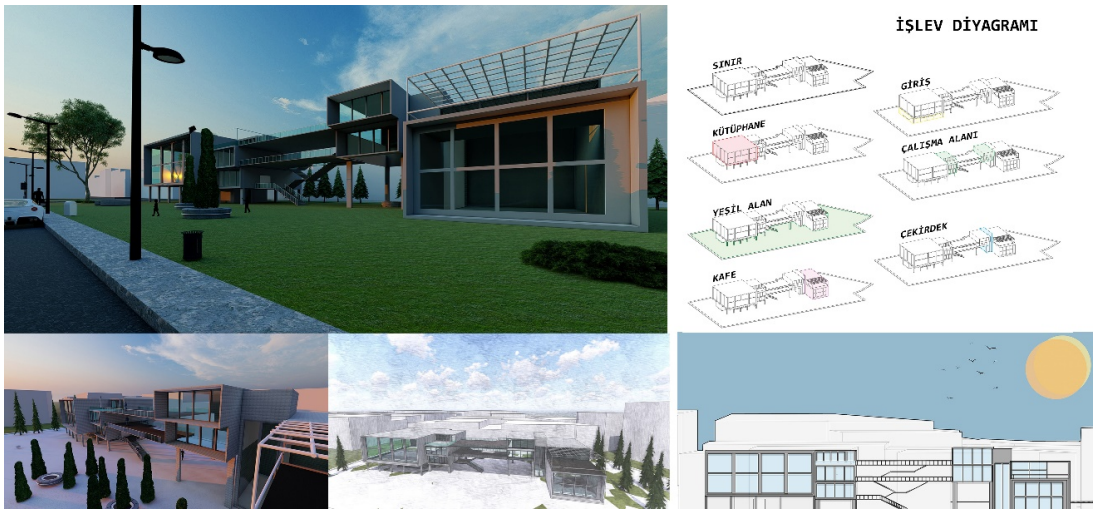

Figure 9: *The project produced by a second-grade student (Ali Berat Arslan).*

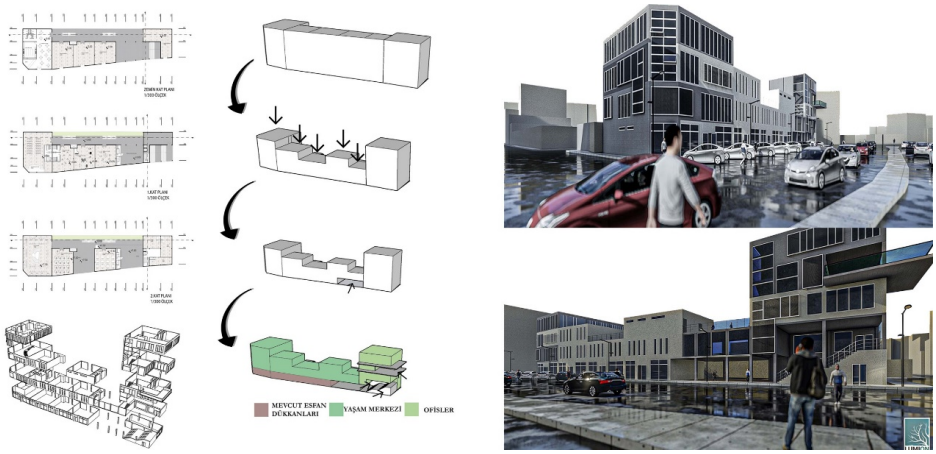

Figure 10: *The project produced by a third-grade student (Fazli Yucel).*

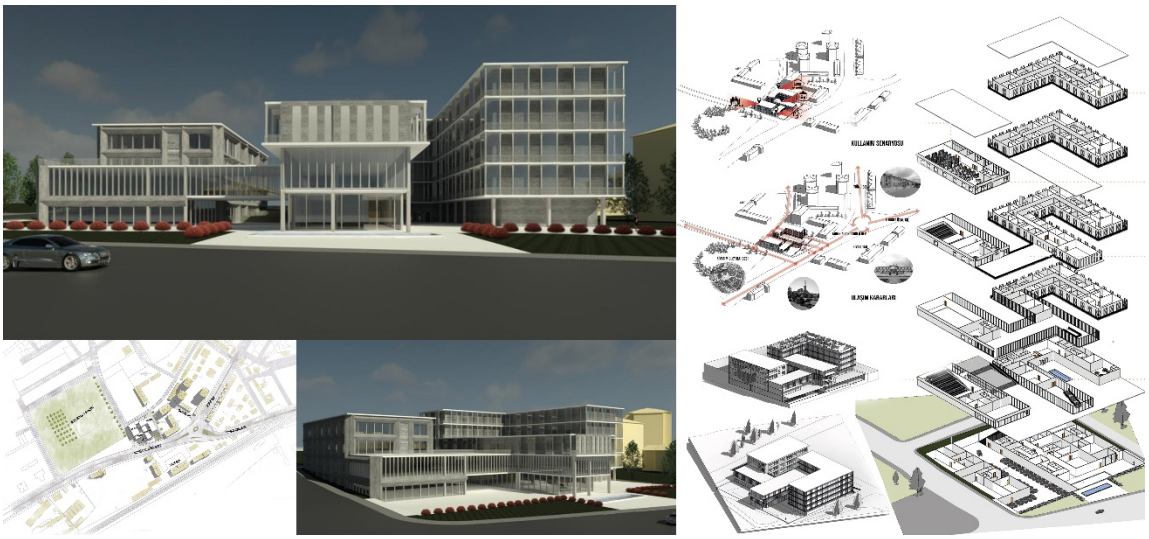

Figure 11: *The project produced by a fourth-grade student (Yasemin Yılmaz).*

The project, developed by a fourth-grader (Yasemin Yılmaz) working on the same definition of 'corner', was carried out on a parcel that met the three important arteries of the city. The layout of the square-shaped parcel was made to cover the entire parcel, thus creating a welcoming and space-complementary attitude for the 'corner' conception. Large prismatic bodies were superimposed at different angles, horizontal and perpendicular. In the mixed-function structure, which functioned as a hotel, fair and congress center, gaps were created between the masses, which led to the mass reaching the appearance of a multi-part structure (Figure 11).

4.5. A discussion on learning outcomes

According to Ismail & Soliman (2010, p. 205), some of the main positions for the instructor and the student in vertical studios are as follows:

"The instructor

- Introduces a studio theme and a multi-level project,
- Defines the sub-project component that each level is responsible for,
- Closely monitors cross-level progress to verify deliverables are handed over from seniors to juniors on time to begin their project.

The student

- Students of various developmental and skill levels interact and compete with one another,
- Form vertical groups with clear peer assignments,
- Each senior student has a junior apprentice,
- Each junior assists a senior."

This scheme provides observation methodology of this study. When considered these steps, a studio theme in this vertical studio was determined and project scales were defined that each level was responsible for. It was anticipated that students of different skill levels interacted and competed with each other in addition to form the peer-to-peer learning. In this sense, some student-centric evaluations and student experiences of the studio were provided by verbal interrogation. Firstly, the relationships between the traditional horizontal studio and vertical studio were asked. According to the students' experiences, any connections between the studios could not be set and, vertical studio was conceived as a new experience. Secondly, participation and interaction in the vertical studio were examined. It was understood that feedbacks, idea exchanges and interactions between the

students were weakly occurred. Thirdly, it was queried that in what ways vertical studio was contributed to the students' skills and knowledge. It was emerged that using computer software was the most participatory and advanced side of the studio rather than concept and technical issues. Namely, senior and junior students in the studio were mostly interacted with each other in terms of presentation techniques. Thus, peer-to-peer learning remained unsatisfactory. Finally, how the studio was conceived was investigated and, the most answers were pointed out that the studio was a conceptual one. Hereinafter, the process will be scrutinized in detail.

The projects developed within the scope of the first 'corner' definition were designed in different parcels in the urban space, with different programs, different scales and different densities. Although the level of the student in the semester to which they were in was decisive, understanding the design problem, thinking on the main theme and the characteristics of the parcel emerged in the student, independent of the semester but in connection with their individual experience and interest in the project. Although the projects developed within the scope of the second definition of 'corner' differed from each other in terms of area, scale and density, they included common design concerns in terms of reference to the historical structure and the emphasis on the 'corner'. In addition, in the samples selected from the third and fourth grades, it was observed that the projects were developed in accordance with the horizontal extension of the parcel. In the projects developed within the scope of the third 'corner' definition, it was determined that there was no scale differentiation in the samples produced by the third grade and fourth grade students; although structures with different functions were designed in the area, results close to each other emerged in terms of the intensity of the architectural program. This situation may be due to the fact that the projects have been worked in the same field, or the subject should be evaluated in terms of the individual experience and motivation of the student. Finally, the projects developed under the fourth 'corner' definition evolved from the small one in terms of program and scale to mixed-function and densely programmed structures. In the projects produced in this group, mass configurations that usually span the entire parcel were preferred to emphasize the 'corner' concept. In particular, the parcel end parts defining 'corner' lines were reinforced with retaining and massive elements, and the gaps were formed in the intermediate areas of the building mass. The projects produced by the second, third and fourth graders were carried out in accordance with the 'corner' concept, which is the main theme of the vertical studio, and with their diversified sub-contexts. The process was completed in close relation to the individual experiences and motivations of students at three different levels. In this context, although the interaction between the students was not directly reflected in the end products, non-hierarchical feedbacks emerged between the lower and upper classes in terms of the way they handle the 'corner' and other design behaviors.

5. Conclusion

The vertical design studio that is the subject of this study was practiced through a summer school opened at the end of the 2021-2022 school year. The aim of such an experiment is to conduct research on how to make architectural design studios more active in SCU Department of Architecture and how to integrate concepts such as interaction and peer learning into the studio. Thus, vertical studio practice can be considered as an experimental production in terms of creating solid foundations for continuous training stages that deepen according to the objectives to be directed after studio practices. In this field of experiment and practice was considered a pre-trial of the stage for the vertical studio. Thus, mastery of the way the system works as a whole and learning outcomes that will enable the process to be reframed in terms of competencies and weaknesses have been revealed. On the other hand, it was determined that more in-depth measurement methods should be developed in order to make the studio process-oriented, to activate peer learning, and to improve dialog, collaboration and sharing in the

studio. To measure the dialog between students and to comprehend the interaction directions and methods, the process needs to be followed more strongly. With the above summer school experience, the creation of the design concern in line with the interaction between the students and the transformation of the means of discovery and understanding in the studio were achieved at a certain point. However, their follow-up could only be read through the end product. For example, it can be said that a significant common learning and sharing platform has emerged among students in terms of using computer software and presentation techniques. However, it has been determined that the understanding of discussing the main theme and/or establishing a dialog and collaborative work among students in similar areas and similar sub-contexts regarding design decisions and behaviors has not yet been established. In this sense, it has been observed that influences cannot be internalized and remain superficial. In summary, for the further implementation phases of the vertical studio, various measurement methods need to be developed and the process-oriented studio approach needs to be adopted/made adopted more strongly. The process of transforming the experienced studio practice and the predictions of the near future into educational practices is, of course, a separate subject of discussion. However, as a clearest result, it has been understood that vertical studio practice, determining a common main theme among students and blending students of different years is a practice that eliminates class-level boundaries in the studio and makes the studio open and accessible.

Acknowledgments: The authors thanked all the students who were involved in the summer studio course.
Conflict of Interest: The author stated that there are no conflicts of interest regarding the publication of this article.
Ethics Committee Approval: N/A.
Author Contributions: The authors confirm sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation. All authors reviewed the results and approved the final version of the manuscript.
Financial Disclosure: The authors declared that this study has received no financial support.

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