Contextualizing Co-Working Spaces:
User Participatory Approach in Architectural Design Studio

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Abstract: The evolution in our understanding of the notion of 'working' has evolved into a spatially diverse spectrum over the last decades. The era of increasing new definition of working enabling collaboration, knowledge sharing and socializing among users is worth of attention in terms of contextual use. Since the popularity of coworking spaces has increased over years, the variation of use contexts is gradually increasing. Thus, it becomes clearly important for designers to take the phenomenon of target users in specific co-working places into account throughout the design process. This study explores the effects of user participation and limits of actor diversity, with an approach focusing spesifically on the university campus area within the new emerging contextual diversity. User participation design method has been tested in the bachelor degree architectural design studio in the Department of Architecture in Ankara Yildirim Beyazit University. The purpose of this study is providing the understanding of the relationship between design process and behavioral patterns with the knowledge obtained through data collection based on user preferences and final versions of the projects.

Keywords: User participation, Co-working space, Design studio, Architecture, Campus design.

1. Introduction

In recent years, globalization, the pandemic process, and technological advancements have led to the emergence of new forms of production/consumption, including novel forms of collaborative organization. Collaborative working is emerging as one of the manifestations of these evolving processes within this current social and organizational scenario (Ivaldi et al., 2018). The tools and architectural environments are also being updated along with the working models. Co-working spaces are distinguished by their exceptional adaptability regarding access, which is contingent upon individual work schedules. They feature diverse functions within the same spatial context, fostering a distinctive blend of domestic and business ambiance (Kingma, 2016).

The prevalence of co-working spaces has witnessed a notable escalation (Gandini, 2015). There is a trend for organizations to open their workspace to the wider community and invite others to share the space. The new working model is increasingly intriguing for practitioners, academics (Waters-Lynch et al., 2016) and students. University campuses can also move away from libraries designated solely as places for reflective study and into learning

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commons of informal and ad hoc collaboration. For Matthews, in the context of academic facilities, it is crucial that spaces are designed to facilitate and enhance the learning experience (Matthews et al., 2011). Co-working spaces on campus can provide a community workspace with shared services that allow individuals and small groups to share ideas and mutually support each other's work. Thus, this paper seeks to answer the research question: How might this space be characterized within university campuses as a specific context?

These spaces represent dynamic and invigorating workplaces, fostering interactions among individuals from diverse professional domains facilitating knowledge exchange and collaborative creation (Fuzi, 2015). In addition to attracting individuals with different profiles and fostering social interactions, these spaces also enhance productivity and promote knowledge sharing among colleagues. University campuses can also move away from libraries designated solely as places for reflective study and into learning commons of informal and ad hoc collaboration. Co-working spaces on campus can provide a community workspace with shared services that allow individuals and small groups to share ideas and mutually support each other's work (Bouncken, 2018). Thus, the design characteristics of these environments can be customized and adapted based on the profiles of the individuals involved. However, not all end-users have the same motivations for choosing these spaces. The motivation criteria are user-based needed for types of work in the university environment, when transferred to the design process, can be beneficial for contextualizing co-working spaces into the campus environment. In this way, it might create the opportunity to question the multi-possible nature of architectural production through user preferences. In other words, user preferences can serve as a foundation for the value propositions of co-working models. However, there is still very scarce research on user preferences regarding collaborative workspaces. This study aims to reveal how the identified requirements, within the context of the user-participatory method, affect the architectural environment on the campus, in what ways, and what typological diversities are created. Furthermore, it seeks to explore how these diversities can be interpreted in terms of spatial identity through various stakeholders. In other words, it aims to discuss the effects of involving actors in the design process on co-working spaces specialized for the campus environment through student projects produced in an architectural design studio as a basis for analysis.

This paper reports testing a user-participatory design approach in a co-working space in a bachelor's degree architectural design studio. Two parts will conduct this twofold approached research. The first part will deal with the literature survey, and then the findings section will present the students' data collection, the final results of the projects, and their feedback. Finally, the paper concludes with the final words providing the inferences for future studies.

2. Theoretical Background
2.1. Participatory Design Studio
Architectural design education follows a trajectory centered on studio courses, necessitating an environment conducive to creativity and experiential learning. Within the design studio, students acquire the essential skills for creative problem-solving and cultivate a capacity for critical thinking (Yurtkuran et al., 2013). In conjunction with evolving needs and perspectives, conventional design philosophies' novel and alternative methodologies have commenced their integration within the doctrines of numerous architectural design studios. Recognizing the significance of context and the conviction that design should not be perceived as a singular process necessitate the proposition of innovative approaches that will enrich students' comprehension of design from the standpoint of users and stakeholders (Shanthi Priya et al., 2020).

In design studios, the most challenging phase for students is often the preliminary phase of the design. In this phase, they must determine the main idea and concept. Participatory and collaborative models can be a beneficial situation for students to transform the data they

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access from library and internet resources into ideas. Introducing participatory design within the context of an architectural design studio aims to empower students by enhancing their comprehension of both the physical and social aspects of the environment. This approach encourages students to appreciate these elements and equips them to make informed decisions (Salama, 1995). As a research tool, this method enables students to discern and obtain the information necessary for the design process by developing a sensitivity to listening to customers and users.

Various stages of user participation are mentioned, from passive to active: 1- in the early decision-making, 2- during the design process, and 3- post-occupancy addition/modification works. The least active mode of engagement is realized through the architect's deliberate attentiveness to the preferences and individual requisites of the client or user. This embodies the favorable aspect of the architect's function as an intermediary, decoding both overt and covert articulated wishes, aspirations, and visions of the intimately acquainted client. The impact of the client on the architectural progression and its outcome is facilitated by the architect's adeptness in empathetically assuming the client's perspective (Wulz, 1986).

2.2. Re-thinking Co-working Spaces

The organizational and spatial arrangements of workspaces are undergoing alteration. The extraordinary shifts in our daily routines, the rapid advancement of digitalization, and the widespread adoption of remote work as a response to the global pandemic have given rise to significant inquiries concerning commuting, the utilization and function of office premises, the evaluation of space efficiency, the magnitude of office space demand, and the necessity for a more adaptable work structure. Consequently, organizations spanning diverse sectors must envision a transformed paradigm for future office work. This novel office paradigm facilitates the effective functioning of individuals with diverse profiles within a communal workspace, promoting shared collaboration and social interaction among coworkers (Isac, 2019).

With universities closed over the pandemic, students turned to co-working spaces to maintain safe in-person collaboration and grab time away from the distractions of shared living. These spaces offer many advantages for self-starters, including networking opportunities, daily structure, increased productivity, and an alternative to pending the nine-to-five in a dull desk cubicle. It is theorized that freelancers with flexible work hours work better if surrounded by others. Moreover, in a time of backward-looking concern for the future of libraries, understanding the function of these public spaces needs to be re-defined to expand the horizons of the vision for university libraries in this century. As a sign of a public facility and a learning space, a university library has a future as a place to meet, read, share, and explore ideas in what might be called a 'living room on the campuses.

3. Studio Case Studies
3.1. Studio Set-up
This studio was spread over a fifteen-week bachelor degree architectural design studio during the Spring semester of the 2022-2023 academic year at Ankara Yildirim Beyazit University. In this studio, focusing on our university campus, students are expected to deal with "Co(l)lab Scapes", which is a term offered by the studio that includes the semiotic meaning of the co-working and library spaces together; students were expected to offer communal facilities where students of various fields and departments can work alongside each other, collaborate and share sources, thus creating a symbiotic relationship linked to a common workplace. These environments should foster productivity and collaboration, leading to introverts and extroverts. All of the students in the studio focused on a co-working facility design for the selected users by the studio teams from various university departments and publicity. Besides the co- working spaces, third-year students considered what library spaces are for and what that means for the university students' decisions today. Regarding truly innovative design, "Co(l)lab Scapes" should

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Figure 1: *The present situation of the campus area (on the left), the planned site plan for the future (on the right) (Source: Author)*

appeal to some balancing parameters: socialization, mix of used spaces, change of scenery, and context. Re-imagining these four and how education is delivered and the role of the campus, the students dealt with the existing assets of the university, the own scape, and the environmental acts.
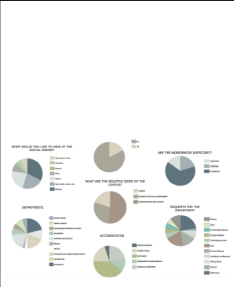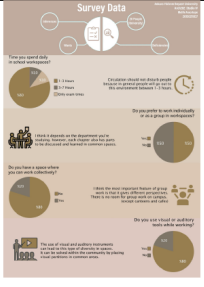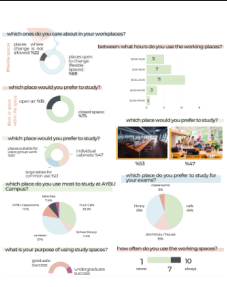
3.2. Data Surveys
Understanding user preferences in studying coworking spaces necessitates the identification of key attributes that have the potential to either fulfill or disappoint specific user inclinations

(Appel-Meulenbroek et al., 2021). With this understanding, the studio students collected data from different sources, such as literature reviews, observations, and interviews. They were free to choose to work either individually or in groups. They visited different co- working spaces in the living city to understand the work environment and social practices. They observed and understood users' practices in the workspaces. Besides, they interviewed students, dormitory users, professors and assistants from various university departments, and independent users such as freelancers,

Table 1: *Data surveys and leading questions for user participation (Source: Author)*

Cases	Case 1	Case 2	Case 3	Case 4
Project Name	*'Practix Hub'* by Ayşenur Demir	*'Productive Mind Hub'* by İrem Gök	*Research Junction'* by Yunus Emre Gencer	*'Journeys'* by Hatice Ceylan
Survey studies				
Leading questions for the conceptual backgrounds	• Where do you study mostly? • Are you a member of any student club? • Why do you prefer student clubs?	• What are your expectations from a working space? • During which period do you work mostly on campus?	• What do you want to see or feel missing in your campus area? • Do you prefer working as a group or individually?	• What is your department? • Please mark the images showing the conditions you would like to work in.

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Table 1: Data surveys and leading questions for user participation (Source: Author)

Cases	Case 5	Case 6	Case 7	Case 8
Project Name	*'Mutualist Space'* by Merve Özdemir	*'Social Working Space'* by Melih Aracıtepe	*'Development Beyond Schools'* by Rümeysa Kırmızı	*Informaction'* by Zehra Su Varol
Survey studies				
Leading questions for the conceptual backgrounds	• What would you request for studying? Which department are you studying at?	• Do you think there is enough space for studying collectively? • Do you use any visual or auditory tools while working?	• Which place do you prefer to study for your exams? • Which one would you prefer: open or closed spaces?	• What are your expectations from a social center? • What facilities do you think a social center should have?

coaches, or entrepreneurs to collect more profound insights. Data were obtained by asking participants questions such as gender, age, level of education, academic field, and criteria determining their motivation for collaborative work. "With this understanding, the studio students collected data from different sources, such as literature reviews, observations, and interviews (Table 1).

3.3. Final Projects

Case 1.

This project, which put 'student clubs' as the focus of the conceptual idea, tries to create more comfortable, natural, and flexible environments for university students specifically with small teams. Student clubs are creating groups and collaborative activities for their working aims and have unique assembly types. Combining different spaces and intersecting the main areas with main effects creates different options for working in wanted areas. Besides, unique areas

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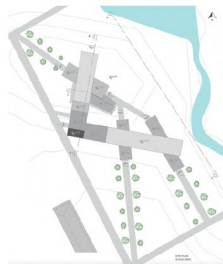
such as 'capsules' help with isolation or silence for individual and group workings.

This project aims to enable people from different fields to interact and work efficiently with the workspace. Meditation is accepted as the main idea since it is thought to affect motivation positively. The spaces are designed to communicate with natural elements, such as in a direction toward a river. The spaces are arranged by establishing an organic connection with topography. Besides, individual workspaces aim to establish a direct relationship with the landscape, taking into account environmental distractions. The court created below, and the zones allocated to the river provide sociality, work, and meditation.

Since the land on which the designs are is an area that brings people from different fields, ages, departments, and faculties together and enables them to work together, this project aims to maintain people's own working experiences and participation activities at junction points. Thus, the concept is to produce spaces offering

multi-purpose and flexible use, where people can be together even if they work with different training methods. The buildings as a whole formed a courtyard in the center. The junction formed in this region is the heart of the region. Studying, sociability, movement, and a healthy working environment come together here. It is also an environment where workshops, group work, seminars, and conversations are held. In addition, by dividing the courtyard it creates into different zones, the idea of intersection is tried to be strengthened.

As workspaces have become a part of people's lives, these places can vary according to people's preferences. Here, the concept offers users 'journeys'. Different users may come to this place for different purposes. The 'routes' will have different scenarios and journeys, but some spaces may be the common point of these scenarios: ' research', 'collaboration', 'seminar', 'working', 'interactive art', and 'library' routes.
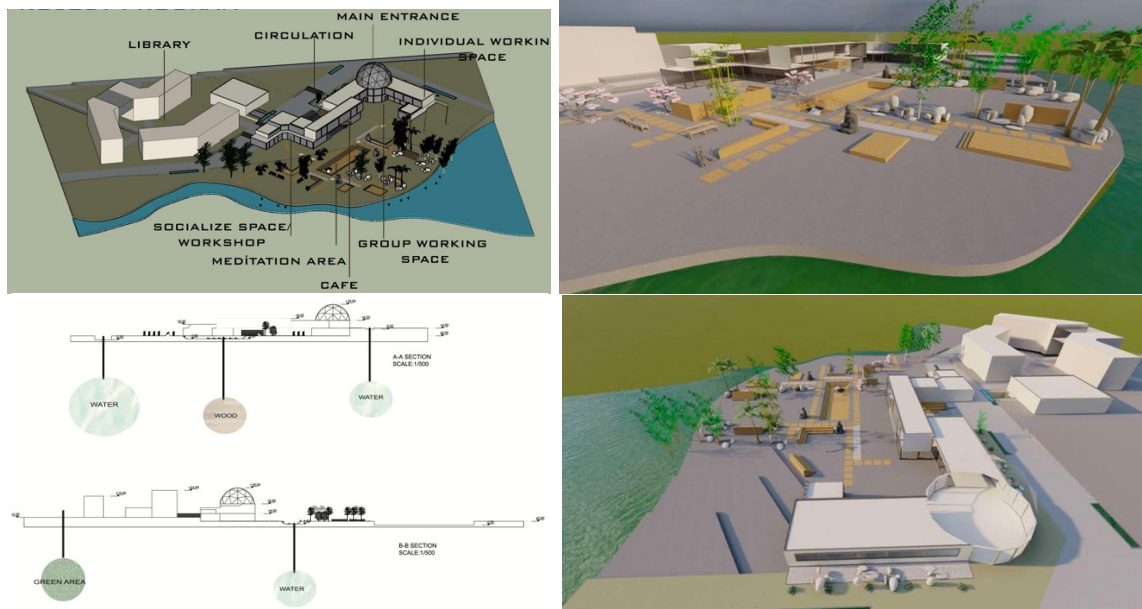
Case 2:

Figure 3: *'Productive Mind Hub'* (Source: Author)

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Case 3:
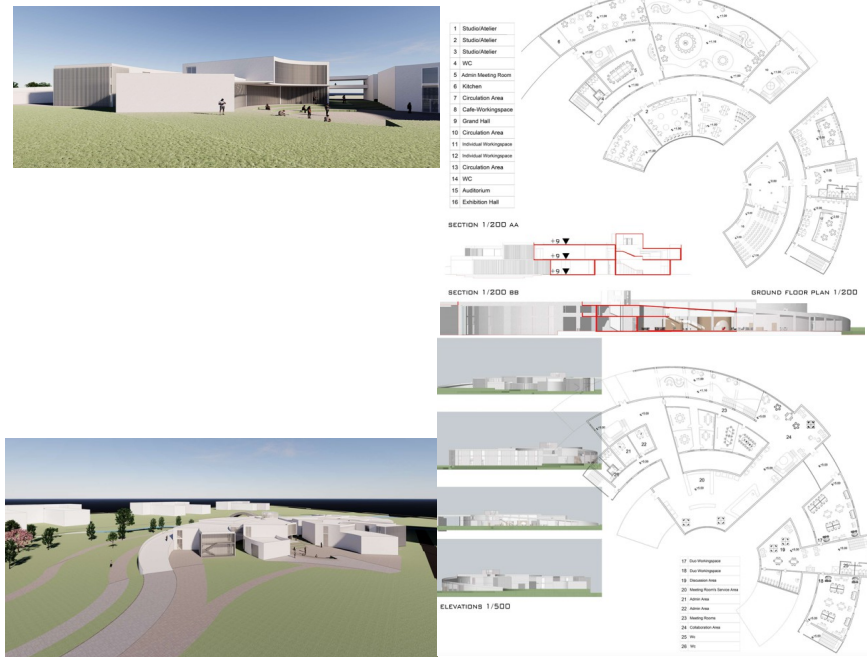
Figure 4: *'Research Junction' (Source: Author)*

Case 4:
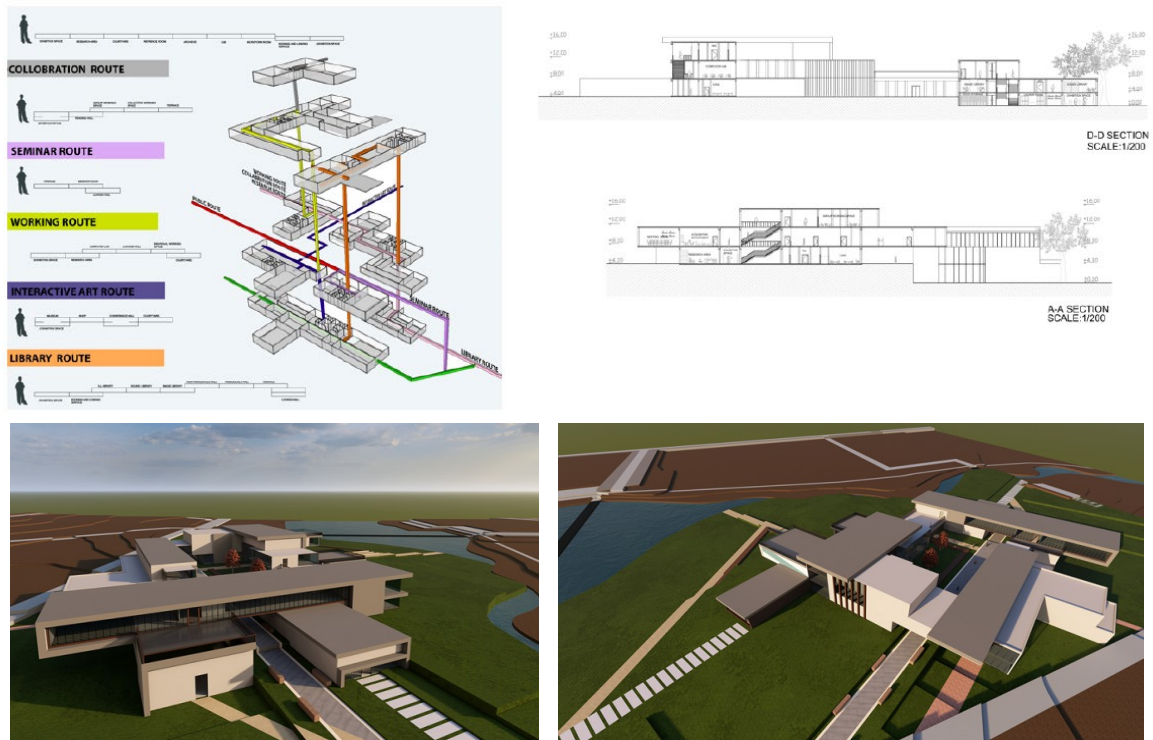
Figure 5: *'Journeys' (Source: Author)*

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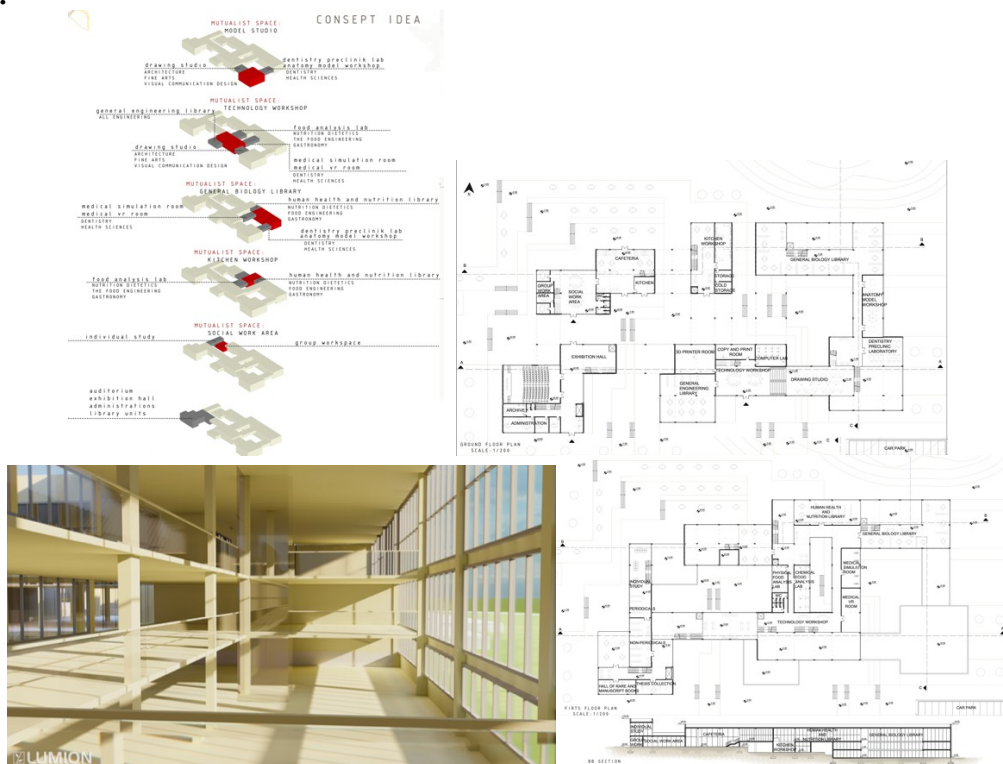
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Case 5:

Figure 6: 'Mutualist Space' (Source: Author)

This design approach includes spaces for the needs of students from different departments. The project has spaces for joint study areas and skills of students. As a concept idea, these spaces are called Mutualist spaces. Because these places are thought to be places where people from different departments will come together and benefit from each other. The first of the mutualist spaces is an interactive space with a model studio, drawing workshop, dental preclinical laboratory, and anatomy model workshop. The second mutualist space is a technology workshop, which interacts with the engineering library, the food analysis laboratory, the drawing studio, and the medical simulation room. The third mutualist space is the general biology library. This place is fed from the medical simulation room, the nutrition library, and the dentistry room. The fourth mutualist space is the kitchen workshop. This place is located in the food analysis laboratory and interacts with the human health library. Finally, the social mutualist space serves as a bridge between the individual study and group study areas, and students work here in a way that they interact with each other. Apart from these are library units, exhibition space, and conference hall.

This design proposes 'social working spaces' to users from similar fields. The term is defined as belonging to a community, accessibility, and sustainability. As a new way to work and share, these spaces aim to provide a productive and

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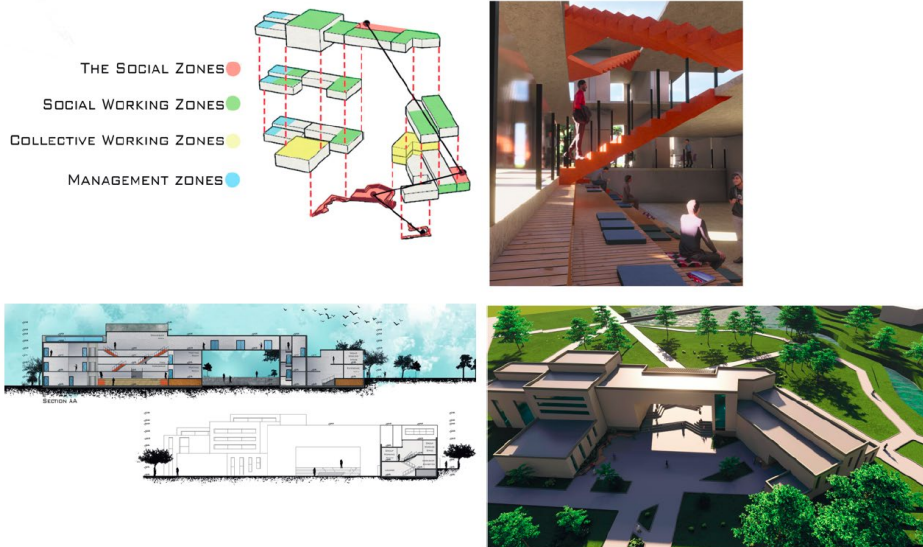
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Case 6:

Figure 7: 'Social Working Space' (Source: Author)

collaborative environment. At the same time, the presence of people interested in similar subjects in the same environment allows them to gain unique experiences. Social working space is not working individually in a social environment but in a working environment where people support each other. The spatial organization was shaped through social, collective, and social zones.

This project approaches working with students, academics, and professionals together. Since

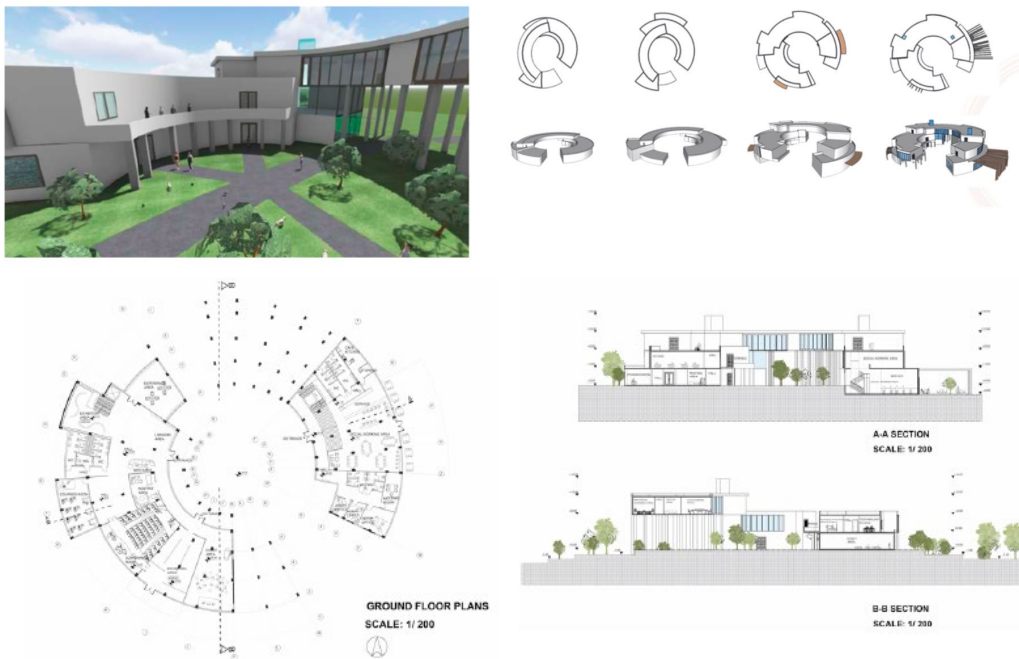**Case 7:**

Figure 8: 'Development Beyond Schools' (Source: Author)

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Case 8:

Figure 9: 'Informaction' (Source: Author)

the students cannot interact the professional people except for short period internships, this design concept may help to share the knowledge and move the professional practice to the undergraduate education.

Here, it is aimed that users share what they have learned and experiences and share knowledge while learning, thus contributing to their development both socially and academically. ' Informaction' is accepted as a context denoting knowledge and interaction. Open and semi-open areas are created for this knowledge transfer within the project's scope. In addition, the group, individual, silent working areas, and mixed usage areas for workshops and conferences are designed to create interaction.

4. Evaluations
Table 2 shows the pattern of design processes. The presented cases are discussed and evaluated; then, the projects are outlined in four parts: conceptual idea, target users, space requirements, and characteristics. Following the order and inquiries of the table, all project cases are figured out in terms of the relationship of the spaces with conceptual ideas and target users.

Thus, the user knowledge implementation's contribution to the studio projects could be opened to discussion. The users of multi-tenant office designs come from different backgrounds. They include users from different fields, departments, self-employed people and others. The spaces mostly associated with multi-users are related to access to social contacts. This is mostly achieved by introducing spatial organizations that enhance user interactions, including formal/informal encounters such as café, seminar rooms or group working spaces. The sense of belonging a place is tried to be achieved by offering different experiences for target users, such as using more visible and accessible units. Besides, some offices offer flexibility due to being on-demand office spaces that are economically affordable.

The acquired data can be evaluated and compared under several main headings. Firstly, one of these is whether design processes are conducted through specific target groups. Based on the data collected through the user participation method, the majority of designers

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directed their concepts towards users who could be grouped based on specific characteristics.

Some designers focused on creating designs for current undergraduate and graduate university

Table2: *Design stakeholders of the case projects (Source: Author)*

	Conceptual idea	Target users	Space requirements	Space characteristics
Case 1	*Student clubs provide the feeling of being part of a community, creating ideological boundaries and students' comfort zones.*	*small teams of university students,*	• *Open spaces* • *Mentor offices* • *Meeting areas* • *Small-sized private areas*	• *Privacy* • *Sociability* • *Isolation* • *Interaction*
Case 2	*Meditation reduces stress, increasing focus, creativity, and inspiration*	*university students, academics, researchers*	• *Green areas* • *Pastoral views* • *Natural elements*	• *Privacy* • *Relaxation* • *Isolation*
Case 3	*Co-working spaces as an intersection point that brings people from different fields, ages, and departments together*	*open for everyone*	• *Workshops* • *Courtyards* • *Interaction areas*	• *Sociability* • *Linearity* • *Flexibility* • *Movement*
Case 4	*Journeys are offered to people from different fields for different purposes.*	*open for everyone*	• *Exhibition space* • *Group and individual working spaces* • *Café* • *Conference hall* • *Research area*	• *Collaboration* • *Interaction* • *Accessibility* • *Sociability* • *Flexibility*
Case 5	*Mutualist space design for students from different departments benefiting from each other (activity-based specialized)*	*University students from different departments*	• *Technology workshop* • *Biology Library* • *Kitchen workshop* • *Model studio*	• *Interaction* • *Flexibility* • *Openness* • *Sustainability* • *Adaptation*
Case 6	*Social working space provides an environment where people from similar fields contribute to each other.*	*People from similar fields*	• *Common areas* • *Collective working areas* • *Social working areas*	• *Interaction* • *Linearity*
Case 7	*An approach proposes an environment that embraces professionals from the private sector and university students.*	*Professionals, academics, and university students*	• *Studios* • *Offices* • *Quiet study areas* • *Group study areas* • *Classes* • *Conference rooms* • *Event areas*	• *Collaboration* • *Isolation* • *Togetherness*
Case 8	*A complex design embraces knowledge and interaction for transferring information while learning socially and academically.*	*University students and academics*	• *Mix usage areas* • *Social areas* • *Open-semi open spaces*	• *Centrality* • *Accessibility* • *Collaboration* • *Openness*

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students studying in various departments, while others preferred targeting students from similar fields. Essentially, this effort enabled architecture students to realize the existence of diverse student groups and researchers within the university with very different needs, prompting them to step outside the confines of their own environments. However, some designers attempted to create hypothetical user groups by associating user groups outside the university (mentors, industry professionals, etc.) with their established concepts. This was valuable in terms of not only considering the current state but also anticipating potential future changes. In any case, it is possible to observe that students' efforts in user grouping resulted in an attempt to understand the behaviors and activities of users. In doing so, they endeavored to create scenarios for spatial organizations and align them with their conceptual ideas. As an example, in a project (Case 7), there are professional employees who will join the user groups from outside. The spatial features aim for specialization that facilitates collaboration while ensuring the separation of activities. The concept created in this scenario is compatible with the goal of providing external experience and knowledge transfer to the university. In another example (Case 8), the user group is defined broadly as existing university students and academics. However, in a project where knowledge transfer is the focus, a spatial feature heavily influenced by user groups has not been clearly articulated among them.

The direct relationships established between activity definitions and target groups are discernible through the resulting products. For instance, in a project aiming to bring together students working in similar areas with social work offices (Case 6) and another project (Case 5) intending to design mutual spaces for students studying in similar departments, both projects aim for interpersonal knowledge transfer, resulting in the creation of spatial characters such as 'interaction.' In the project focusing on the coexistence of similar areas, flexible common areas serving a general purpose were attempted to be defined, gathering users engaged in similar research fields in these

spaces. In the other project (Case 5), university students were classified based on the spaces required by their education, and the individual requirements and potential needs of these spaces were identified. This allowed the combination of seemingly unrelated departments. For example, a model studio envisioned for architecture students is simultaneously intended as a model workshop for dentistry students. On the other hand, when looking at designs that do not aim to serve a specific user group but rather create spaces for everyone (Case 3 and Case 4), it can be observed that the spaces are characterized through 'flexibility' and 'sociality.' In fact, in these projects, the designers have claimed the following after conducting user research: if students need private spaces at a university, they should find them within their own departments. When users come to co-working spaces for work, socialization, and collaborative activities, they should find areas that provide flexibility and communication. In concepts oriented towards specialization for individuals and small groups (Case 2, Case 1, and Case 7), it is evident that emphasis is placed on individual spaces, and this effect is conveyed through a spatial character like 'isolation.' The most crucial research finding underlying these studies is that users have identified the need for spaces where they can work individually or in small groups.

5. Conclusion

Throughout the semester, students produced various building typologies in line with the needs of various user groups and different concepts. Through this method, within the scope of the studio, user data is considered as a form of information at the outset and is integrated into the process. It is acknowledged as a tool for directly or indirectly transforming new information into the final architectural product within the process. In professional practice, the utilization of information, requests, and problems from actual users to determine the designer's project objectives, ideas, and spatial needs holds a significant place in both practical application and literature. The endeavor of students to define projects and manage the process based on the desires of real users is a

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crucial experience. It can be said that the participatory design method is more efficient than the traditional method because users' input provides greater clarity in design decisions and approaches design from multiple perspectives. Compared to the traditional method, where concept production is more arbitrary, clearer ideas were obtained in determining the issues to be addressed in the design with the participatory method. The fact that this method is closely linked to real needs and is specific to the context, people and culture has prevented the production of approaches based on assumptions.

The collaborative and participatory process not only widened the designer's perspective on user opinions, requirements, ideas and solutions but also facilitated direct feedback and critical comments from users in the design studio. Implementing this approach in the project and conceptual stages proved beneficial, with user-generated ideas contributing significantly to the students' design formulation. Although the aforementioned participatory and collaborative model was applied in a single studio, its potential adoption in architectural education curricula signifies a transformative shift in teaching methodologies within traditional architecture schools and the professional realm.

It is considered important that the designer, beyond having a role of designing with the data at hand (site, architectural program, other), is both a designer and a constructor by establishing the context and architectural program together with external stakeholders and factors. In this study, the importance and contribution of students experiencing this role in studio education was evaluated.

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