

Gamifying Place-making in Architectural Design Studio: A Workshop Model Based on Place, Territoriality and Appropriation

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Abstract: Architectural design education often addresses formal, functional, and technical competencies more directly than the experiential and socio-cultural dimensions of place. This study examines whether a process-oriented gamification approach can help translate abstract concepts of place, territoriality, and appropriation into architectural design decisions. The research was conducted as a qualitative, practice-based educational intervention within a fourth-year undergraduate graduation design studio. Fourteen architecture students participated in a workshop that combined a theoretical presentation with sequential, time-limited, progressively disclosed design missions. Students first created an imaginary user, then designed a 25 m² spatial unit in response to that user's routines, interests, needs, and sensory preferences. They subsequently formed four groups and integrated their individual units into collective spatial compositions. A theory-informed qualitative content analysis was conducted on 14 individual proposals and four group outcomes. The coding framework focused on user responsiveness, personalization, appropriation, territorial hierarchy, spatial transitions, shared use, and collective integration. The findings suggest that user profiles functioned as generators of spatial programs rather than as secondary additions to predetermined building types. Students incorporated occupational practices, memory, natural light, sound, privacy, atmosphere, and social relationships into their proposals, demonstrating an understanding of place-making as a relationship between function and lived experience. At the collective stage, groups developed different integration strategies, including adjacency, sensory progression, temporal and narrative sequencing, functional interdependence, and shared circulation conceived as a social connector. The study suggests that process-oriented gamification, based on missions, explicit rules, time constraints, progressive disclosure, and collaborative problem-solving, may provide a useful framework for operationalizing theoretical concepts in architectural studio education. Although limited by its small sample and single-course context, the workshop offers a potentially transferable model for linking place theory with user-responsive and collaborative design practice. It demonstrates how playful structures can support negotiation without relying on points, badges, leaderboards, or external rewards.

Keywords: Place-making, Architectural design education, Design studio, Workshop-based learning, Gamification

1. Introduction

Must architectural education always be serious, rigid, and outcome-driven, or can students also learn through play? Design studios already involve experimentation, imagination, uncertainty, and the exploration of alternative possibilities, all of which are also central to play. Introducing playful structures into architectural education does not diminish its intellectual depth. On the contrary, it may create a more engaging environment in which students feel free to explore, take risks, collaborate, and transform abstract ideas into spatial experiences.

The educational use of play is not a recent development; play has long been recognized as a fundamental human activity that supports learning, personal development, and socialization throughout the lifespan. Its educational value is therefore not limited to childhood but also extends to adolescents and adults. Building on this long-standing relationship between play and learning, researchers have increasingly examined how the motivational, interactive, and participatory qualities of games can be incorporated into educational settings. Within this growing field, game-based learning has attracted attention for its potential to enhance learner engagement, support active participation, and improve learning outcomes across a wide range of disciplinary and instructional contexts (Albano et al., 2023; Dai and Zhang, 2025; Okasha, 2025).

From an educational perspective, games can be understood as structured systems that engage participants in rule-based challenges directed toward clearly defined goals and outcomes (Salen and Zimmerman, 2004). These characteristics make games suitable for learning activities that require learners to participate actively, make decisions, solve problems, and respond to changing conditions. However, the existence of shared structural qualities does not mean that all games or game-based learning practices function in the same way. As Plass et al. (2015) emphasize, games represent a highly diverse category that varies across genres, subject areas, learning objectives, modes of interaction, and gameplay mechanics. Consequently, game-based learning should not be regarded as a single and fixed pedagogical method. Rather, it can be understood as a broad educational framework that may be adapted to the needs of different disciplines, learner groups, and instructional settings.

Game-based learning is generally defined as an instructional approach in which gameplay is intentionally designed around specific learning outcomes (Shaffer et al., 2005). Although the concept is frequently associated with digital games, game-based learning does not necessarily require a digital environment and may include both digital and non-digital formats (Plass et al., 2010). Its defining feature is not the use of technology, but the purposeful relationship established between educational content, game structures, and intended learning objectives. Such activities may include clearly defined rules, structured challenges, interaction, decision-making, feedback, and goal-oriented tasks that enable learners to engage actively with subject matter. Rather than merely exposing students to ready-made games, game-based learning may also involve the design of interactive activities that progressively introduce concepts and guide learners toward an intended educational outcome (Anastasiadis et al., 2018). Accordingly, the effectiveness of a GBL activity depends on the alignment between its mechanics, disciplinary context, instructional purpose, and desired learning outcomes (Plass et al., 2015).

This understanding also requires a distinction between game-based learning and gamification. In game-based learning, the learning experience itself is reorganized around gameplay, purposeful challenges, and structured interaction. Gamification, by contrast, generally refers to the incorporation of selected game elements, such as points, badges, levels, leaderboards, rewards, or competition, into an existing activity to increase motivation and participation (Plass et al., 2010). Although these approaches may overlap, they do not necessarily rely on the same design logic. A learning activity can draw on game mechanics without depending on reward-based systems, while a gamified activity may retain the structure of a conventional task and add motivational features. This distinction is important for the present study because the workshop did not employ points, badges, levels, leaderboards, or winner-based rewards. Instead, it restructured the learning process through sequential missions, explicit task rules, time constraints, progressive task disclosure, and collaborative challenges.

The pedagogical foundations of game-based learning are closely associated with constructivist and experiential learning theories. From this perspective, learning occurs through active engagement, experience, reflection, interaction, and problem-solving rather than through passive transmission of information. Learners are not positioned simply as recipients of predetermined knowledge; instead, they construct understanding by making decisions, testing possibilities, collaborating with peers, and applying concepts within meaningful situations. Game-based learning can therefore support learner-centred educational environments in which students participate directly in the formation of knowledge and develop understanding through experience (Bakan and Bakan, 2018; Seddighi-Khavidak et al., 2026). These characteristics are especially relevant in contexts where abstract concepts must be translated into practical decisions.

Architectural design education represents such a context. Studio pedagogy traditionally emphasizes the development of formal, functional, spatial, and technical design skills. While these dimensions can be addressed through drawings, models, plans, and iterative design exercises, the experiential and socio-cultural dimensions of place may remain more abstract. Concepts such as place, territoriality, appropriation, identity, belonging, and everyday use are not always easily translated into visible design decisions. Students may understand these concepts theoretically but still struggle to operationalize them within a spatial proposal. Game-based and game-inspired learning approaches offer a possible means of addressing this difficulty by organizing the design process through structured challenges, scenarios, constraints, collaboration, and user-oriented decision-making. In this way, theoretical concepts can be encountered through action rather than remaining detached from the practical processes of design.

The adaptability of game-based learning makes it particularly relevant to architectural design studios, where tasks are already iterative, problem-based, and open to multiple solutions. Sequential challenges can encourage students to reconsider earlier decisions, scenario-based tasks can foreground the needs and routines of users, and collaborative activities can reveal how individual spatial choices affect larger collective arrangements. Importantly, such approaches do not require digital games. Non-digital workshop formats can also employ game-related structures by progressively revealing tasks, limiting time, defining rules, and requiring participants to negotiate solutions with others. In this sense, game-informed pedagogy can support the translation of abstract architectural concepts into tangible spatial responses while preserving the exploratory character of studio education.

To better understand the conceptual basis of the workshop and its analytical framework, it is first necessary to clarify several interrelated concepts, particularly space, place, territoriality, personalization, and appropriation. Place-making is grounded in the distinction between space and place. Cresswell (2004) argues that space

becomes place when it acquires meaning through human experience and association. This understanding is closely related to phenomenological approaches to place. Relph (1976), for example, emphasizes lived experience, identity, and degrees of insideness and outsideness in shaping people's relationships with place, while Tuan (1977) similarly highlights experience and perception in the transformation of space into meaningful place. From this perspective, place-making can be understood as a relational process in which physical settings acquire meaning through use, memory, sensory experience, and social relations.

Territoriality provides a related framework for understanding how individuals and groups regulate their relationships with the physical environment. Altman (1975) discusses territorial behaviour in relation to privacy, control, boundaries, access, and social interaction. In architectural settings, these processes may be expressed through distinctions between private, semi-private, shared, and public domains, as well as through thresholds and transitions that regulate accessibility and interaction.

Appropriation refers to the process through which users establish active relationships with their environments through use, adaptation, control, personalization, and identification. In environmental psychology, appropriation has been associated with the ways individuals and groups make spaces their own through everyday practices and symbolic identification (Korosec-Serfaty, 1976; Benages-Albert et al., 2015). This process also resonates with Relph's (1976) emphasis on involvement, identification, and belonging in the experience of place. In the present study, these concepts form the theoretical basis for examining how students translated user characteristics into spatial decisions and how personalization, appropriation, territorial hierarchy, spatial transitions, and shared use emerged in their proposals.

Previous studies have demonstrated the potential of game-based and gamified approaches in architectural education (Albano et al., 2023; Okasha, 2025; Seddighi-Khavidak et al., 2026); however, relatively little attention has been paid to process-oriented gamified workshop models that translate abstract concepts such as place, territoriality, and appropriation into design studio activities through sequential, time-constrained, and collaborative missions. Bringing these concepts into the design process requires students to consider not only spatial form and function, but also users, meanings, routines, boundaries, and relationships between individual and collective space. A workshop model that begins with user definition, proceeds through individual spatial design, and concludes with collective integration may therefore provide students with a structured way to explore these interrelated dimensions.

The aim of this study was therefore to enhance the architectural design learning experience by incorporating selected game mechanics into a workshop conducted within an undergraduate architectural graduation studio. Previous research suggests that gamification can support learner motivation, engagement, social interaction, participation, and academic performance when learning activities are purposefully designed (Bouchrika et al., 2019; Yildirim, 2017; Zainuddin et al., 2020). Drawing on this pedagogical premise, the workshop sought to create a playful yet purposeful learning environment in which students could receive task-based guidance and progressively develop their understanding of place-related concepts. Accordingly, this study asks: How can a gamified, sequential workshop model support the translation of the concepts of place, territoriality, and appropriation into architectural design decisions?

In this study, gamifying does not refer exclusively to the use of reward-based mechanisms. Instead, it describes a process-oriented approach in which the workshop was restructured through sequential missions, explicit rules, time constraints, progressive task disclosure, and collaborative problem-solving. Through these mechanisms, students were encouraged to translate the concepts of place, territoriality, and appropriation into architectural design decisions and to explore how spatial meaning emerges through the interaction of users, physical environments, and contextual conditions.

2. Method

This study was designed as a qualitative, practice-based educational intervention conducted within a fourth-year undergraduate graduation design studio. The intervention combined a theoretical presentation with a gamified design workshop to examine how students translated abstract concepts of place into user-responsive spatial decisions.

Fourteen fourth-year architecture students participated in the workshop, which was conducted as part of the regular course activities. For the purposes of analysis and publication, all identifying information was removed from the student outputs. Individual spatial proposals were coded as S1-S14, while collective group compositions were coded as G1-G4. The workshop was structured through sequentially disclosed, time-limited tasks. Rather than presenting the entire process at the outset, each task was introduced only after the

previous stage had been completed. This progression was intended to encourage rapid decision-making, active participation, and collaborative problem-solving.

2.1 Theoretical Presentation

Before the workshop, students attended a theoretical presentation that established the conceptual framework for the subsequent design tasks. The presentation began by distinguishing between space and place. Space was discussed in relation to measurable physical characteristics such as dimension, form, and geometry, whereas place was presented as a spatial condition shaped by human experience, memory, meaning, identity, and cultural context (Cresswell, 2004; Relph, 1976; Tuan, 1977). This distinction was further developed through theoretical perspectives that addressed the experiential, phenomenological, social, and cultural production of place.

The presentation then introduced the concepts of territoriality, defensible space, personalization, appropriation, and flexibility. Territoriality was examined through the distinction between private, semi-private, and public spatial domains, with particular attention to the role of boundaries, transitions, ownership, and control (Altman, 1975). Personalization was discussed as the adaptation of space according to users' everyday habits, functional requirements, and aesthetic preferences, while appropriation was framed as a process through which users establish identity, belonging, and meaning in space (Korosec-Serfaty, 1976; Benages-Albert et al., 2015).

The presentation concluded by proposing that the design of place emerges through the interaction of three principal components: space, user, and context. This framework directly informed the structure of the workshop. The first task focused on the user, the second addressed the spatial response to that user, and the final collaborative task required students to reconsider individual spaces in relation to shared territories, transitions, social interaction, and a broader collective context.

2.2 Workshop Structure

The workshop was organized as a sequence of time-limited missions intended to encourage students to actively construct knowledge. Participants completed progressively revealed tasks, with each stage building upon the decisions made during the previous one. The workshop consisted of three main design stages and concluded with visual presentations and narrative scenarios explaining how individual spaces evolved into meaningful places.

2.2.1 Stage 1: Defining the user

In the first task, students were given five minutes to create an imaginary user. No predefined user category was assigned, and students were free to construct any type of character. They identified the distinguishing characteristics of the user and considered the individual's lifestyle, habits, interests, and spatial needs.

This task shifted the starting point of the design process away from a predetermined building function. Instead of beginning with a room type or architectural program, students began with a user whose characteristics would later shape the spatial proposal.

2.2.2 Stage 2: Individual spatial design

Following the user-development task, each student was asked to design a space within a fixed 5×5m area, corresponding to a total floor area of 25 m². The function of the space was not predetermined. It could be a dwelling, workplace, studio, recreational space, or another environment considered appropriate for the user.

Students were expected to organize the space according to the specific needs, routines, activities, and preferences of the character they had created. The fixed spatial boundary served as a common design constraint, while the absence of a prescribed function allowed diverse interpretations to emerge. Each 25 m² proposal therefore represented an individual relationship between user identity and spatial organization.

2.2.3 Stage 3: Collective spatial integration

After completing the individual proposals, students formed four groups of three or four participants. Each group was asked to bring together its independently designed 25 m² units and transform them into a coherent collective arrangement.

The students explored different ways of positioning the square modules beside one another while establishing spatial relationships, transitions, entrances, circulation routes, and possible shared areas. Rather than merely

placing the individual units next to each other, they were required to negotiate how spaces designed for different users and functions could coexist as part of a larger whole.

During this stage, students reconsidered the boundaries between individual and collective space and discussed how private, semi-private, and shared territories could be organized. The task therefore introduced a new level of complexity: students had to retain the identity and requirements of each individual unit while simultaneously producing continuity, interaction, and spatial coherence at the group scale.

2.3 Data Analysis

A theory-informed qualitative content analysis was conducted on the 14 individual spatial proposals and four collective group compositions. The initial coding framework was derived from the theoretical concepts introduced during the presentation and focused on user responsiveness, personalization, appropriation, territorial hierarchy, spatial transitions, shared use, and collective integration. The individual proposals were examined primarily in relation to the correspondence between user characteristics and spatial decisions, including the representation of routines, needs, preferences, personalization, and appropriation. The collective compositions were analysed in terms of territorial organization, spatial transitions, shared functions, relationships between individual units, and the integration of different users and activities into a coherent whole.

Student outputs were examined through comparative analysis, focusing on recurring design strategies and the relationship between theoretical concepts and spatial decisions. The analysis focused on how the theoretical concepts introduced during the presentation were translated into spatial decisions and subsequently reconsidered through collaboration and negotiation.

3. Findings

The individual proposals demonstrated that user profiles functioned as generators of spatial programmes rather than as secondary additions to predetermined building types. Students translated occupational practices, daily routines, personal interests, sensory preferences, and social relationships into specific architectural requirements (Figure 1). For example, S1 responded to the physical demands of a professional dancer through non-slip flooring, fixed mirrors, ventilation, changing facilities, and access to water. S2 organized a repair workshop around workbenches, testing surfaces, acoustic control, display shelves, and a memorial corner, while S3 developed an art gallery shaped by the user's relationship with natural light, the movement of the sun, the full moon, artistic production, and social encounter.

The proposals also indicated that students moved beyond basic functional programming by incorporating sensory, emotional, and symbolic requirements. Natural light, sound, landscape, memory, atmosphere, and privacy became active design considerations. S2 included a memorial corner dedicated to a former master, introducing personal memory into the workshop environment. S3 used the terrace and changing natural light as sources of artistic inspiration, while S5 organized the therapeutic environment around water, natural sounds, and aromatherapy. These examples suggest that students interpreted place-making as a relationship between practical use and lived experience.



Figure 1: Units of S1, S2, and S3

Personalization and appropriation became visible where students connected spatial organization to users' identities, memories, preferences, and long-term practices. In S2, the display of collected objects and the

memorial corner transformed the workshop into a space of personal continuity rather than a purely technical workplace. Similarly, S3's gallery combined artistic production, exhibition, observation, and social encounter. Across the individual proposals, spatial meaning was therefore produced not only through function but also through the ways in which users were expected to experience, personalize, and identify with their environments. Table 1 summarizes the user profiles, proposed spatial programmes, and principal design responses developed in the individual stage of the workshop.

Table 1: Overview of Individual User Profiles, Spatial Programmes, and Principal Design Responses

Group	Code	User profile	Designed space	Primary spatial responses
G1	S1	Ozgun, 26, professional dancer	Dance and choreography studio	Non-slip flooring, fixed mirrors, natural and artificial lighting, sound system, changing room, shower, water station, ventilation
G1	S2	Deniz, vocational-school graduate interested in electronics and repair	Furniture and electronics repair workshop	Workbench, central testing table, acoustic panels, collection shelves, memorial corner, surrounding garden
G1	S3	Valentin, 28, French artist	Art production and exhibition gallery	Separate production and display areas, terrace, views of the moon and movement of the sun, social reception potential
G2	S4	Children, supported by a teacher or pedagogue	Children's activity and play space	Child-scale furniture, rounded corners, dining and hygiene areas, free play, sensory play, outdoor green area
G2	S5	Therapist and clients	Therapy space	Water and nature sounds, aromatherapy pool, sensory and acoustic regulation
G2	S6	Store customers	Private consultation and waiting space	Product catalogue, seating, waiting area, private customer room
G3	S7	Contemporary dancers and young amateur performers	Dance studio	Mirrored walls, open floor, bodily awareness, concentrated morning use
G3	S8	Theatre actors and performance artists	Dressing and preparation room	Costume preparation, rehearsal, calm atmosphere, late-afternoon use
G3	S9	People interested in animal behavior	Hamster observation garden	Transparent surfaces, visible tunnels, wheels and hiding areas, observational use
G3	S10	Residents and dog owners	Dog garden	Free movement for dogs, social interaction among owners, meeting point
G4	S11	Nail-studio user	Nail studio	Individual service function within a shared commercial environment
G4	S12	Tailor	Tailor workshop	Production-oriented workspace connected to collective circulation
G4	S13	Yoga practitioner or instructor	Yoga studio	Wellbeing-oriented activity within the collective program
G4	S14	Tailor as resident	Studio house	Live-work relationship integrating production and everyday life

Following the individual design stage, students were organized into groups and asked to combine their independently developed 25 m² units into coherent collective compositions (Figure 2, Figure 3). This stage required them to reconsider individual spatial decisions in relation to adjacency, circulation, transitions, shared use, territorial hierarchy, and social interaction. The collective outcomes demonstrated different strategies for bringing together spaces developed for distinct users and functions. While some groups established coherence through physical proximity and shared circulation, others relied on sensory progression, functional interdependence, or temporal and narrative relationships.

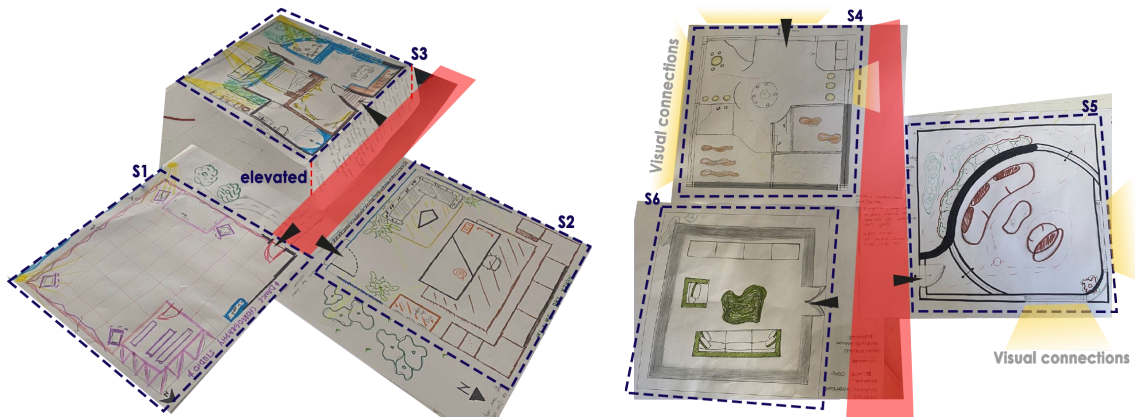


Figure 2: Final collective compositions of G1 and G2, showing the physical arrangement of the individual units

G1 positioned S3 above S1 and S2, creating a compact collective arrangement that preserved the autonomy of the three units. The group established coherence through adjacency, visual continuity, and a shared emphasis on creativity and production. The final composition brought movement, craft, and artistic expression into proximity without combining them into a single homogeneous programme.

G2 organized the three units through differentiated degrees of activity, privacy, and sensory control. The final composition created a transition from the open and active children's space to the controlled therapeutic environment and the more enclosed customer consultation area. Collective coherence was therefore achieved through a gradual spatial sequence ranging from shared activity to protected individual experience.

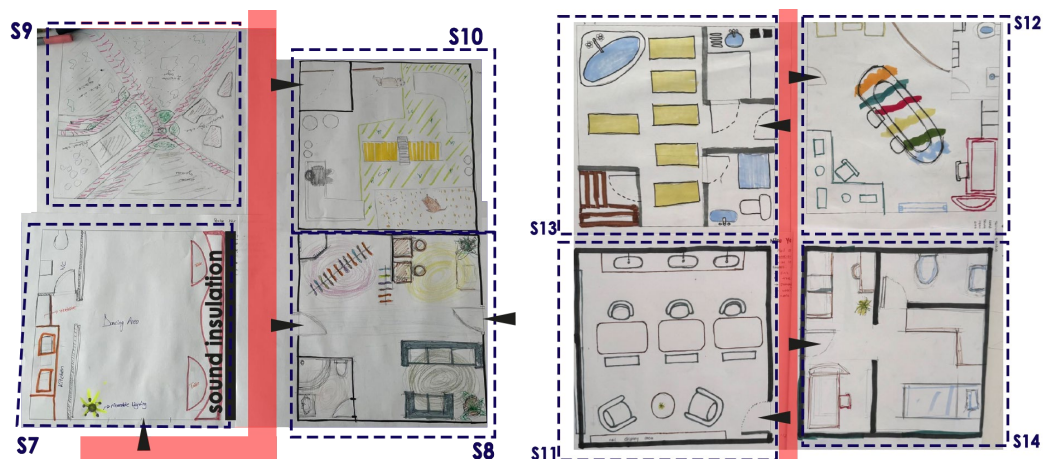


Figure 3: Final collective compositions of G3 and G4, showing the physical arrangement of the individual units

G3 integrated its four units through a temporal and narrative sequence rather than through direct functional similarity. The dance studio and performers' dressing and preparation room established a relationship between bodily activity, rehearsal, and performance, while the hamster observation garden and dog garden introduced informal learning, recreation, and neighbourhood interaction. The collective composition was therefore shaped by complementary activities and changing patterns of use throughout the day.

G4 connected the studio house, yoga studio, nail studio, and tailor workshop through a common circulation corridor conceived as a social spine. While the individual units retained their domestic, productive, service-oriented, and wellbeing functions, the shared circulation encouraged encounters and functional interdependence. Defining the studio house as the tailor's residence further reinforced the live-work relationship between everyday life, craft production, and collective infrastructure.

4. Conclusion

This study explored how selected gamification mechanics could be incorporated into an architectural design workshop to support the translation of abstract place-related concepts into spatial decisions. Rather than

relying on reward-oriented mechanisms such as points, badges, or leaderboards, the workshop adopted a process-oriented structure based on sequential missions, progressive task disclosure, explicit constraints, time limitations, and collaborative problem-solving. Within this structure, students moved from the definition of an imaginary user to the design of an individual 25 m² spatial unit and subsequently to the collective integration of independently developed proposals.

The analysis of the individual outputs suggests that the user profiles functioned as active generators of spatial programs rather than as secondary descriptions added to predetermined building types. Students translated occupations, routines, interests, sensory preferences, memories, and social relationships into architectural requirements. Consequently, the proposals extended beyond basic functional organization by incorporating natural light, sound, atmosphere, privacy, memory, landscape, personalization, and appropriation as design considerations. These findings indicate that place-making was interpreted not only as the physical arrangement of space but also as the construction of relationships between users, activities, meanings, and lived experience.

The collective stage introduced an additional level of spatial and social complexity. Students were required to preserve the identities of the individual units while negotiating adjacency, circulation, territorial hierarchy, transitions, shared use, and interaction. The four groups developed different strategies of collective integration. These included visual and functional proximity, gradual transitions between activity and privacy, temporal and narrative relationships, and shared circulation conceived as a social connector. The results therefore suggest that collective place-making did not depend on producing functionally identical spaces. Instead, coherence emerged through the negotiation of difference, the establishment of complementary relationships, and the reinterpretation of individual design decisions within a broader spatial context.

From a pedagogical perspective, the workshop suggests that process-oriented gamification may offer a useful framework for operationalizing theoretical concepts within architectural studio education. The progressive structure required students to respond to newly disclosed tasks, reconsider earlier decisions, and collaborate with peers rather than approach the design process as a single predetermined exercise. In this respect, playful instructional structures did not reduce the intellectual or theoretical depth of the studio. Instead, they provided a structured setting in which theoretical knowledge could be explored through design action, negotiation, and iterative decision-making.

The study is nevertheless limited by its small sample of 14 students, its implementation within a single graduation studio, and its reliance on student design outputs rather than direct measurements of motivation, engagement, or learning achievement. The findings should therefore be understood as evidence of the spatial strategies that emerged during the workshop rather than as proof of measurable improvements in student performance. Future research could apply the model in different architectural studios and institutional contexts, compare gamified and conventional workshop formats, and incorporate student interviews, reflective texts, questionnaires, or pre- and post-workshop assessments. Such studies could provide a more comprehensive understanding of how process-oriented gamification influences student engagement, conceptual understanding, collaboration, and long-term design learning.

Overall, the study contributes a potentially transferable workshop model for connecting place theory with architectural design practice. By positioning the user, spatial experience, and collective negotiation at the centre of a sequential design process, the model offers an alternative way of teaching place-making as an active, relational, and experiential dimension of architectural design.

Ethics Declaration: This study was conducted as part of regular course activities and involved the analysis of anonymized student design outputs. No sensitive personal data were collected, and no identifying information is reported. Formal ethical clearance was not required under the applicable institutional procedures.

AI Declaration: Generative AI tools were used for language editing, and table preparation. All research decisions, analyses, interpretations, and final revisions were completed and approved by the author.

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