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CONSTRUCTIVIST PEDAGOGY IN ARCHITECTURE AND URBANISM WORKSHOPS: CASE STUDY OF THE RED KIOSK

Abstract:

Architectural education has often advanced at a slower pace than the rapid transformations of spatial practice and society. Within this imbalance, the architectural workshop emerges as a condensed yet intensive format of experimentation, providing a distinctive environment for testing pedagogical approaches. This study critically examines the workshop The (Iconic) Red Kiosk (Banja Luka, 2024) through the lens of constructivist theory. Drawing on an established framework of constructivist learning environments, the evaluation demonstrates the relevance of constructivist criteria for assessing workshop pedagogy. At the same time, it underscores the workshop's value as a pedagogical model, capable of fostering critical, interdisciplinary, and culturally engaged learning within architectural education.

Keywords: architectural workshop; constructivist pedagogy; constructivist learning environment; heritage-based design education; design pedagogy.

КОНСТРУКТИВИСТИЧКА ПЕДАГОГИЈА У РАДИОНИЦАМА АРХИТЕКТУРЕ И УРБАНИЗМА: СТУДИЈА СЛУЧАЈА ЦРВЕНИ КИОСК

Сажетак:

Архитектонско образовање често напредује спорије од брзих трансформација просторне праксе и друштва. У том контексту, архитектонска радионица се појављује као интензиван и временски сажет формат експериментисања, који нуди специфично окружење за испитивање педагошких приступа. Ова студија критички разматра радионицу Црвени киоск – путовање кроз модернистичко насљеђе (Бања Лука, 2024) кроз оквир конструктивистичке теорије. Полазећи од афирмисане теорије конструктивистичких окружења за учење, евалуација показује релевантност конструктивистичких критеријума у процјени педагошких вриједности радионице. Истовремено, наглашава се значај радионице као педагошког модела који подстиче критичко, интердисциплинарно и културно ангажовано учење у архитектонском образовању.

Кључне ријечи: архитектонска радионица; конструктивистичка педагогија; конструктивистичко окружење за учење; образовање у дизајну засновано на насљеђу; педагогија дизајна.

1. INTRODUCTION

Architectural education has historically exhibited a relatively slow pace of evolution particularly when contrasted with the rapid transformations and complexities occurring within spatial practices and broader societal contexts [1]. Considering this imbalance, the architectural workshop, conceived as an intensive and temporally condensed learning format, emerges as a critical site of experimentation. This beloved format for architecture professors and mentors offers a framework for tackling and exploring pressing contemporary issues within a deliberately constrained timeframe. The architectural workshop is frequently conceived as a format of "relaxation," reserved for creative undertakings that lack a clearly defined thematic or methodological anchor within the established curriculum.

Research in architectural pedagogy has demonstrated that the workshop constitutes a significant and widely utilised informal model of learning, one in which innovative and contextually appropriate methods are tested and refined [2], [3]. Workshops are praised for their responsiveness to pressing social concerns and cultural challenges, while simultaneously fostering deeper student engagement with the complexities of real environments [4]. Workshops can also be situated within the context of research, specifically the domain of practice described as project-based research — an approach in which the design project itself constitutes the primary vehicle of inquiry and production of a new knowledge [5], [6]. Accordingly, the architectural workshop should be recognised not merely as a supplementary exercise, but as a valuable pedagogical model within the broader field of spatial design education [7].

Although the architectural workshop model is widely acknowledged as significant, it has seldom been examined through the lens of broader educational theories and methodologies. Undertaking such an analysis would allow its pedagogical values and potential to be systematically demonstrated. Typically, the conduct of a workshop elicits positive responses and experiences from both students and mentors. The outcomes are tangible—integrating engineering and artistic dimensions—and often abundant, despite the brevity of the workshop format. Consequently, its pedagogical qualities are rarely subjected to critical scrutiny, as they are generally taken for granted. This study is premised on the argument that a critical examination of the workshop as a pedagogical model can yield significant insights into the dynamics of the learning process. Such insights may prove instrumental not only in refining the intuitive and creative dimensions of workshop design but also in informing improvements to longer-term forms of design instruction, such as the design studio.

The research begins from the premise that constructivist theories of learning are particularly relevant to architectural education, given that the discipline is fundamentally grounded in active production, the contextualisation of knowledge, and collaborative endeavour—principles that lie at the heart of constructivist pedagogy [8]. The workshop format in architectural education likewise embodies general constructivist characteristics: its collaborative and open-ended character aligns structurally with constructivist learning environments. Its outcomes depend largely upon collective effort and are typically directed towards addressing tangible problems derived from real-world contexts. This leads to the central argument of the study: a constructivist-based analytical framework can serve as a method for examining the pedagogical characteristics and qualities of architectural workshops, particularly the critical, contextual, and collaborative values that underpin constructivist learning environments [9]. Insights gained from such analysis may inform the refinement of the premises that shape the learning environment, thereby fostering constructivist pedagogy more effectively in practice. This framework thus enables a systematic pedagogical assessment rather than a reliance on participants' subjective impressions alone.

This study is grounded in the context of higher architectural education at the undergraduate level in Bosnia and Herzegovina, examined within the broader post-Yugoslav tradition of spatial design pedagogy. Therefore, its findings are intended to be applicable to comparable educational settings in South-Eastern and Central Europe. Methodologically, the research adopts a qualitative case study approach to critically examine the pedagogical model of the workshop, *The (Iconic) Red Kiosk – A Journey Through Modernist Heritage*, held in Banja Luka in 2024. To render its pedagogical qualities more intelligible and measurable, the workshop is evaluated within a framework grounded in David H. Jonassen's (1994) theory of constructivist learning environments [9]. The research combines descriptive accounts, the mapping of learning strategies, and the analysis of artefacts, assessed against criteria derived from constructivist pedagogy. The study thus identifies both the strengths and limitations of the learning environment to formulate pedagogical recommendations for comparable contexts. In doing so, it contributes to a deeper understanding of how the workshop model can be operationalised within architectural education.

2. CONSTRUCTIVIST PEDAGOGY AND LEARNING ENVIRONMENTS

Constructivism has emerged as an influential paradigm in contemporary educational theory and the philosophy of science. Since its rise in the latter half of the twentieth century, the theory has fundamentally reshaped established conceptions of knowledge, learning, and teaching that dominated Western thought [10]. As a theoretical foundation for education and pedagogy, constructivism posits that knowledge is not passively received from external sources but is actively constructed by individuals as they engage with new experiences, mental structures, and beliefs. Consequently, each person perceives and understands the world uniquely. According to constructivist theories, the human mind functions as an interpretive instrument that processes events, objects, and perspectives from the environment, thereby constructing knowledge that is inherently individual and personal [9], [11]. This epistemological stance stands in sharp contrast to objectivist and positivist traditions, which assume the existence of a stable, singular, and knowable reality whose representation can be transmitted uniformly to learners. In contrast, constructivism emphasises the interpretive, developmental, and context-dependent nature of knowledge, viewing learners as intellectually generative agents who pose questions, solve problems, and construct meaning through reflective engagement with their environments [8].

Constructivism is not a homogeneous theory. Building on the work of seminal theorists from different disciplinary backgrounds—John Dewey, Jean Piaget, Lev Vygotsky, Jerome Bruner, and Donald Schön—constructivism branches into distinct theory strands, such as epistemological and radical constructivism, and, within education, into cognitive, and sociological constructivism, each with its own pedagogical implications [8]. Despite their differences, the various branches of constructivism ultimately converge on several essential premises. They share the view that human knowledge is not passively received but actively constructed by each individual. In this process of construction, the subject and the context remain inseparable, shaping one another continuously. Moreover, knowledge itself is understood as dynamic and mutable, always subject to reinterpretation and transformation [8].

It could be argued that the relevance of constructivist theory in architecture education lies in the profound alignment between constructivist pedagogical principles and the very nature of architectural practice. Architecture knowledge and skills are not acquired through the passive absorption of information but through active processes of inquiry, experimentation, and creation. Dewey (1938) argued that authentic learning emerges from inquiry and experience situated in real contexts [12]. This principle resonates strongly with architectural studios and workshops, where students engage with concrete sites, communities, and cultural conditions. Vygotsky's (1978) position that social interaction precedes individual cognition, and his emphasis on the social dimension of learning are reflected in dialogue, negotiation, and collective effort as essential formats of architectural education [13]. Within this framework, the architecture design mentor acts as both mediator and participant in the process of knowledge creation.

Constructivist learning environments, as articulated by David H. Jonassen (1994), encourage learners to engage with complex, context-dependent problems—precisely the conditions under which architectural design knowledge is generated [9]. This perspective resonates with Schön's (1983) thesis that the design professions confront uncertain, messy, real-world problems, while simultaneously challenging the dominance of "technical rationality," which proves inadequate in addressing such complexities. Schön advocates for situated, experiential learning, in which reflective practice unfolds through two complementary processes: thinking and adjusting during action and reflecting retrospectively on what has been done to learn from it [14]. Within design studio and workshop settings, students participate in iterative cycles of design, critique, and revision. They are encouraged to interrogate their own thinking and actions, adapting design strategies in response to new information and feedback from mentors and peers. In this way, architectural education operationalizes constructivist principles by cultivating reflective practice, collaborative inquiry, and problem-solving grounded in real-world contexts.

It is important to emphasize that the authors of this study do not advocate an orthodox application of constructivist learning in architecture, nor do they propose the rejection of alternative approaches. Rather, they acknowledge that by situating learning within authentic design challenges, fostering collaboration, and promoting reflective practice, constructivist pedagogy equips architecture students not only with technical competence but also with the critical and interpretive capacities required to navigate the plural and dynamic realities of the built environment. This leads to the central question of the study: to what extent is the workshop model genuinely aligned with constructivist principles—does it enable students to cultivate critical, contextual, and collaborative

modes of learning—and, more broadly, how might architectural learning environments be adapted to foster constructivist-based learning in practice?

The educational psychologist David H. Jonassen provided a seminal synthesis of the essential features of constructivist learning environments, identifying three interrelated clusters of characteristics [9]. These clusters will be interpreted here for the purpose of formulating criteria for evaluating the workshop as a constructivist-based learning environment.

1) The active construction of knowledge. Knowledge is actively built through several processes:

- reflection, aligned with intentions and expectations;
- inquiry and invention, which support the learner's engagement;
- internal negotiation—an inner dialogue in which the student seeks to reconcile, reorganise, or transform their understanding. This negotiation may involve doubt, resistance, and even temporary confusion, all of which are integral to deep learning;
- the eventual formation of mental models—internal representations of the world.

Within the workshop or studio setting, students do not merely acquire technical skills; rather, they negotiate between theory, context, intuition, and critique. This process leads to the development of their own design language—precisely the kind of mental model that enables creative and responsible practice.

2) The contextual nature of knowledge. Knowledge is not universal, abstract, or neutral; it is rooted in specific circumstance:

- articulated through authentic tasks, most often those encountered in real life, where context situates reality as one of problems, uncertainty, and complexity;
- emerging from case-based problems, which demand context-specific reasoning;
- shaped by multiple perspectives. No context is singular, closed, or self-evident; rather, it is multilayered and polyphonic, influenced by diverse actors and their differing interests, worldviews, and needs.

Learning environments should therefore avoid oversimplifying reality and instead represent its inherent complexity—acknowledging that there are always multiple representations of the world.

- 3) The social dimension of learning. Learning unfolds through interaction, exchange, and collective reflection, and it:
- supports social negotiation, whereby participants exchange opinions, arguments, and interpretations to arrive at shared meaning. In an educational context, students do not merely receive information but actively negotiate it through discussion, critique, and reinterpretation. The outcome is the collective construction of knowledge—validated through group processes rather than solely through individual perception;
- involves leadership, since collaboration does not always imply equal positioning of all participants. Leadership here does not signify domination but rather the guidance of processes, the maintenance of focus, and the encouragement of contributions. In this way, collaboration is prevented from becoming chaotic and instead directed towards structured and productive learning.

3. RESEARCH METHODOLOGY

3.1. METHODS AND TECHNIQUES

The study adopts a qualitative research methodology, undertaking a critical analysis of the pedagogical model of the architectural workshop within the framework of constructivist learning theory. Qualitative research is, by its nature, multi-method [13, p. 218], [16]. The case study serves as the principal strategy, focusing on the architectural workshop *The (Iconic) Red Kiosk – A Journey Through Modernist Heritage* as a bounded case. The interpretive orientation situates the research within the workshop's actual educational environment—specifically, the architectural studies at the University of Banja Luka and its partner networks. In addition, the study incorporates a grounded theory perspective, allowing explanatory insights to emerge organically from the analytical process itself [13, p. 235]. No rigid initial plan was imposed, thereby enabling flexibility in the sequencing of phases during data collection and analysis.

The case study draws upon a combination of complementary research tactics:

- Detailed description of the workshop experience—based on the initial workshop plan, the mentor's reflections, and conversations with students from the University of Banja Luka.
- Mapping of learning strategies and their characteristics—identifying the pedagogical features of the workshop's learning environment.

- Analysis of workshop artefacts—conducted through a qualitative reading of the workshop outcomes. This analysis engages both textual and visual materials, including documentation, photographs, and drawings, which together provide a rich basis for interpreting the workshop's learning strategies.
- Evaluation of learning strategies—carried out through specific criteria derived from constructivist pedagogical theory.

Data collection relied on reflective observation, drawing on workshop documentation, photographic records, and personal notes compiled during and after the event. Semi-structured conversations with students were conducted following the workshop; however, as responses were predominantly positive they served primarily as contextual corroboration rather than as a primary analytical source. The interpretive framework was not subject to formal external validation. The authors acknowledge these as inherent limitations of a single-case, practitioner-led study.

Artificial intelligence tool (Google Gemini) was employed exclusively for proofreading and stylistic refinement. The author retains full responsibility for the conceptual framework, methodological design, and substantive content of the article.

3.2. LEARNING STRATEGIES EVALUATION FRAMEWORK

Drawing on Jonassen's (1994) synthesis, three interconnected clusters define a constructivist learning environment [9]: (1C) Active construction of knowledge — encompassing participation, reflection, internal negotiation, and the formation of mental models; (2C) Contextualisation of knowledge — through authentic tasks, case-based problems, engagement with complexity, and exposure to multiple perspectives; (3C) Social construction of knowledge through collaboration — including social negotiation and guided leadership. These three clusters, comprising eleven specific characteristics, form the evaluative framework applied in the following analysis of workshop activities.

Table 1. Learning strategies evaluation framework based on David H. Jonassen's theory

Cluster (Jonassen)	Characteristics (Jonassen)	Questions (adapted by the authors)
1C/Construction – Active construction of knowledge	Active participation	Do students shape knowledge themselves through research and invention, rather than merely receiving information?
	Reflection	Are there moments in which students think about the learning process in accordance with the goals and expectations of the workshop?
	Internal negotiation	Do students articulate their mental models and test them through explanations, predictions, and adaptations?
	Mental modeling	Do the workshop results indicate that participants have developed new or adapted mental models?
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	Are the workshop activities based on tasks that can be encountered in real life?
	Complexity of reality	Does the workshop avoid oversimplification and present problems characterised by uncertainty and multiple representations of reality?
	Case-based problems	Are problem situations employed that require context-specific reasoning?
	Multiple perspectives	Do students explore different views on the problem and learn to embrace the complexity and ambiguity of reality?
3C/Collaboration – Social construction of knowledge	Collaboration	Does learning take place through teamwork, collective effort, and the exchange of ideas?
	Social negotiation	Do participants negotiate meaning, interpretations, and solutions, thereby developing skills of agreement?
	Leadership	Is there a mediating role of the mentor who guides the process without dominating it?

4. CASE STUDY CONTEXT

4.1. THE K67 KIOSK PHENOMENON

Urban environments constructed during the golden period of socialist Yugoslavia adhered to modernist principles that encompassed the integration of modular elements forming coherent spatial systems—from building complexes, urban areas and neighbourhoods to comprehensive infrastructure networks. The prefabrication system, conceived as a method of rapid optimised construction, manifested not only in residential and public architecture but also in the systematic design of urban furniture. Within this taxonomy of standardised urban elements, the modular architecture of the K67 kiosk, designed by Saša J. Mächtig in 1966, has emerged as particularly iconic in contemporary discourse.

The K67 kiosk exemplified the modular philosophy inherent to Yugoslav modernism, wherein a single standardised unit could be replicated, combined, and adapted to various urban contexts across the federation. Mächtig's design embodied the socialist ideals of accessibility, functionality, and democratic distribution of services, while simultaneously achieving aesthetic coherence through its distinctive red form. These recognisable kiosks became an integral component of everyday urban life for inhabitants across Yugoslav cities, functioning as ubiquitous points of commercial and social interaction within the modernist urban fabric.

Although K67 kiosks have largely disappeared from the urban landscapes of former Yugoslavia, they persist as significant elements within the collective memory. This mnemonic persistence has gained renewed relevance in recent years as heritage protection policies, academic institutions, and the public have begun to recognise the cultural and architectural significance of 20th-century socialist modernist heritage. The trend has been particularly pronounced in the ex-Yugoslav region, with the 2018 exhibition "Toward a Concrete Utopia: Architecture in Yugoslavia 1948–1980" at the Museum of Modern Art in New York serving as a pivotal catalyst for international recognition [17]. Such heightened scholarly and public interest enables cities with substantial repositories of socialist modernist architecture to develop comprehensive strategies for heritage protection, critical interpretation, and cultural presentation that contribute to broader trajectories of urban development and identity formation.

4.2. WORKSHOP BACKGROUND AND EDUCATIONAL PARTNERSHIPS

Responding to the growing international recognition of modernist heritage and the specific challenges facing K67 kiosks in the former Yugoslav region, a multi-year collaborative framework was established in Banja Luka. The research was undertaken through several strategic actions employing an activist design approach, with modernist heritage in Bosnia and Herzegovina and the K67 kiosk as the primary subject of analysis. *The (Iconic) Red Kiosk* workshop emerged from this layered framework of prior research, educational activities, and collaborative initiatives, representing the culmination of sustained institutional commitment rather than an isolated pedagogical experiment.

The foundational groundwork was established through several interconnected projects and institutional partnerships. In 2022, the Centre for Spatial Research (a local NGO), in collaboration with Docomomo Bosnia and Herzegovina, initiated *The Red Kiosk Project*, aimed at documenting and assessing the heritage of the K67 kiosk as part of the Banja Luka European Capital of Culture portfolio. This research phase provided historical and contextual insights into the kiosk's significance within Yugoslav modernist heritage, thereby laying the foundation for subsequent educational interventions. The same partnership, in collaboration with the University of Banja Luka, Faculty of Architecture, Civil Engineering and Geodesy, conducted two Collaborative Design Studios: in 2022 and *CRVENI Studio* in 2023. The primary objective of these studios was to familiarise students with the architectural values of the socialist Yugoslav period through the creation of a digital archive of Banja Luka's modern architecture and urbanism, and the development of proactive approaches to heritage protection by identifying and promoting key modernist values.

These courses established methodological approaches for student engagement with heritage preservation and contemporary reinterpretation, grounded in social interaction with the local community and oriented towards regaining a sense of belonging in modernist environments. The partnership structure enabled collective research and learning through co-imagining scenarios, co-creating narratives, and activist design production. Continuous public promotion of studio concepts and creative narratives for heritage reuse aimed at broader civic engagement and negotiation of community identity.

The new phase of the K67 kiosk educational endeavour was initiated through the Erasmus+ *Architecture Pop-up Lab Exchange (APLE)* project in 2024. This project provided a fresh institutional and pedagogical framework for experimental learning approaches and resulted in the *xRED Experiment* within the *APLE Lab* at the Faculty. The experiment integrated knowledge from previous research and studio work into a focused intervention addressing the restoration and cultural

reactivation of the K67 kiosk. Complementing the workshop activities, the *xRED Experiment* incorporated a public lecture series designed to raise awareness of modernist heritage among both academic and general audiences. Additional funding support from the Danube Small Project Fund and CEEPUS enabled the comprehensive implementation of this new cycle of research, education, and public engagement activities - *The (Iconic) Red Kiosk* workshop.

4.3. THE ICONIC RED KIOSK - A JOURNEY TO MODERNIST HERITAGE

The international student workshop took place from 7 to 11 October 2024 at the University of Banja Luka campus. The workshop assembled 23 students from four countries within the region, representing diverse educational backgrounds and levels of architectural training. The pedagogical framework was supported by a multidisciplinary team of 10 mentors, whose expertise spanned architectural design, heritage conservation, structural engineering, and design pedagogy. This composition facilitated a learning environment characterised by multiple knowledge domains and varied approaches to material investigation and spatial reinterpretation. Coordination was provided by the Centre for Spatial Research and the Faculty of Architecture, Civil Engineering and Geodesy of the University of Banja Luka, working in partnership with CULTstore Novi Sad (Serbia), Kobra Arch Brno (Czech Republic), and the K67 restoration team in Celje (Slovenia). Institutional support came from the CEEPUS A.B.C.D. network—a consortium of four architectural faculties across Serbia, Czech Republic, Montenegro, and Bosnia and Herzegovina—as well as Docomomo Bosnia and Herzegovina.

This multilayered institutional framework positioned the workshop as a nexus of pedagogical experimentation, heritage conservation practice, and transnational academic collaboration. The convergence of students and mentors from different cultural and educational contexts introduced both opportunities and complexities into the learning process, as participants negotiated varied understandings of modernist heritage, diverse design vocabularies, and different expectations regarding architectural pedagogy. These conditions became integral to the workshop's character and, as we will demonstrate, significantly shaped the pedagogical outcomes.

5. RESEARCH RESULTS

5.1. WORKSHOP ASSIGNMENT AND OBJECTIVES

The deteriorated red Kiosk K67 was acquired within the framework of the Erasmus+ APLE project in 2025. Its reintegration into contemporary life was motivated by the project’s need for a symbolic site of encounter between education and practice—a small-scale, mobile pop-up space capable of accommodating diverse functions. The kiosk was thus envisaged simultaneously as a symbolic object and a functional environment, representing the APLE project’s educational values and evoking memories of its familiar everyday presence in the life of the city. In the context of the growing academic interest in the K67 over the past decade, alongside several renowned restorations, the red structure was identified at the outset of the project as an ideal solution [18].

The student architectural workshop was conceived as the initial step in the restoration process of the K67 kiosk. The preliminary plan entailed cleaning the structure and dismantling it into its elemental components within the university campus grounds. Following the workshop, these components were to enter a phase of professional restoration at a specialized workshop. A key outcome of the workshop process was the public exhibition of the kiosk’s components in an engaging and striking manner, intended both to draw attention to the commencement of restoration work and to solicit professional and financial partners for its realisation. The site for exhibiting the workshop results was selected within the university campus, in the entrance zone of the Faculty building. However, beyond these practical objectives, the student workshop also pursued pedagogical aims.

Figure 1. Workshop atmosphere 2024. © Authors

The first pedagogical objective was grounded in familiarising students with the challenges of modernist heritage in Bosnia and Herzegovina, of which the K67 kiosk is a part. Students were expected to expand their knowledge of the objective values of the modernist architectural legacy of the region, while simultaneously observing it through the lens of contemporary dissonance—its contested meaning and value. The workshop provided an opportunity for both students and mentors to engage in the promotion of this heritage and to render it more visible within public discourse.

The second and third pedagogical objectives of the workshop were situated within the context of learning the processes of architectural design. As students dismantled a previously assembled structure whose logic was grounded in prefabrication and modularity, the reversed process of deconstruction was explored as a means of design education. The guided dismantling, cataloguing, and sorting of components was intended to provide students with a tangible understanding of assembly logic, the connections between elements, the relationship of parts to the whole, and the structural rationale—concepts which, in conventional design practice, are often approached indirectly through drawings on paper. Furthermore, the workshop aimed to enable students to experience the learning process bodily, encountering how ideas materialise in space rather than remaining confined to the classroom as sketches or digital files. This embodied dimension of learning was strongly grounded in teamwork and collaboration.

5.2. WORKSHOP MAIN RESULT

The task – how to publicly exhibit the kiosk's components in an engaging and striking manner – culminated in the workshop's outcome: a spatial installation entitled *RED Kiosk Transformer*, positioned within the public domain of the University campus, on the forecourt of the newly constructed Faculty building. This installation may be understood as a contemporary artistic-architectural articulation of a specific phase in the restoration of the K67 kiosk, drawing direct inspiration from the authentic axonometric diagram produced by its author, Saša J. Mächtig. The diagram systematically reveals the kiosk's constituent elements in their reciprocal spatial relations, thereby functioning as a manual for assembly. The temporary (de)constructivist structure foregrounds and visually accentuates the defining attributes of the K67 – modularity, flexibility, prefabrication, transformability, and structural lightness.

The installation affords its audience – primarily students of architecture, urbanism, civil engineering, and design – the opportunity to apprehend in situ the elements, joints, and materials from which the kiosk is composed. In addition to the authentic kiosk components, the installation is predicated upon the design and assembly of newly conceived wooden framework, devised to support the individual kiosk elements in the manner of a spatial diagram. This framework was conceived to achieve visual unobtrusiveness, constructive stability, and the conferment of a novel aesthetic dimension.

The symbolic inauguration of the exhibition was marked by a communal gathering in the immediate vicinity of the installation, accompanied by the serving of hot dogs. This performative gesture evoked the quotidian cultural practices associated with kiosks in Yugoslav urban centres and towns, thereby reinforcing the installation's socio-cultural resonance. The installation was subsequently dismantled after six months, and the authentic elements of the K67 kiosk now await the commencement of professional restoration.

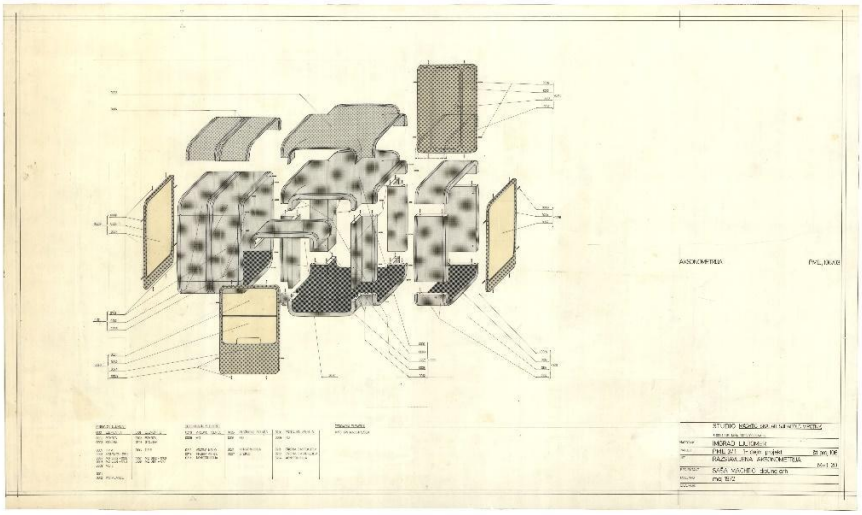

Figure 2. Axonometric drawing of the second generation of the K67 from 1972 by Saša J. Mächtig. © Museum of Architecture and Design (MAO), Ljubljana

Figure 3. Figure 3. The installation of the RED Kiosk Transformer at University of Banja Luka Campus, 2024. © Authors

5.3. WORKSHOP LEARNING STRATEGIES

4.1.1. Activity A1 / Context

Description. The workshop mentors and guests, including professors from several schools of architecture and members of professional architectural practices, delivered a series of presentations, which were followed by a discussion in the informal evening setting of the faculty café. Delivered in a condensed format, the presentations afforded participants an overview of the socio-cultural context of modernism in Yugoslavia, the significance of Kiosk K67 as an architectural and cultural heritage asset, the plurality of research and promotional practices of modernist heritage, and examples of Kiosk K67 restorations. Participants were also introduced to selected small-scale design practices for public space deemed appropriate for informing critical reflection on the kiosk.

Pedagogical focus. Engagement and independent inquiry: The workshop seeks to stimulate student interest in the subject matter and the central problem through a condensed format of informational inputs and collective sharing of experiences.

Mental reconstruction and preparatory visualisation: A key pedagogical objective is the mental reconstruction of the kiosk's form and spatial qualities, providing students with an internalised "image" of the object that informs and guides the subsequent practical phase of the workshop. This preparatory visualisation functions as a cognitive scaffold for design decisions made during hands-on activities.

Community formation and intercultural exchange: The workshop intentionally cultivates a workshop community by facilitating introductions among mentors, students, and external specialists

drawn from diverse cultural, linguistic, and academic backgrounds. This process of acquaintance fosters interdisciplinary dialogue, mutual learning, and a shared sense of responsibility for the project's intellectual and material outcomes.

Tangible outcomes. A digital collection of the presentations was compiled and distributed to participating students, providing an accessible archival resource for ongoing study and reference. Photographic documentation of the event and the workshop's visual identity were disseminated through social media channels to extend the project's public reach and to support broader dissemination of its pedagogical and research outputs.

Table 2. Activity A1 / Context: learning strategies evaluation

Cluster	Characteristics	Evaluation
1C/Construction – Active construction of knowledge	Active participation	Students primarily received information through presentations but were encouraged to pursue independent research.
	Reflection	Reflection occurred during discussions, though the limited time constrained deeper engagement with the learning process.
	Internal negotiation	-
	Mental modeling	The activity supported mental construction of internalised models of the kiosk form and its social context.
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	Presentations and discussions addressed real issues of heritage, restoration, and design practice.
	Complexity of reality	The socio-cultural context and plurality of perspectives introduced complexity, though the condensed format risked oversimplification.
	Case-based problems	Examples of restorations and promotional practices provided case-based material for contextual reasoning.
	Multiple perspectives	Contributions from mentors, guests, and students exposed participants to diverse viewpoints and interpretations.
3C/Collaboration – Social construction of knowledge	Collaboration	Learning took place through collective exchange of ideas in both formal and informal settings.
	Social negotiation	Discussions and informal conversations facilitated negotiation of meaning, interpretation, and potential solutions.
	Leadership	Mentors moderated presentations and discussions without dominating, allowing space for student contributions.

Critique. The workshop afforded insufficient time for independent or team-based investigation of the kiosk, and it did not provide an adequate level of specialist information regarding the practical processes of restoration. Consequently, students risked forming a superficial understanding of both the subject and the problem, lacking the empirical grounding and technical insight necessary for informed design or conservation decisions.

4.1.2. Activity A2 / Plan

Description. An initial plan for the workshop was collectively formulated, with subsequent reflections and revisions incorporated during the activities. Mentors and students jointly devised the plan after discussions on the workshop's objectives and an assessment of the kiosk's condition. Based on this plan, teams were established and tasks distributed. The ambitious and intensive five-day schedule, spanning from the initial introductions to the public presentation of results, remained open to discussion and modification in response to the pace of work and the dynamics of implementation.

Pedagogical focus. Collective planning and responsibility: Students and mentors jointly shaped the trajectory of the workshop, fostering a sense of ownership of the process.

Adaptability and reflection: The plan was conceived as a flexible framework, subject to continuous adjustment considering ongoing reflection and evaluation.

Task distribution and teamwork: The formation of teams and allocation of tasks encouraged organisational skills, coordination, and collaborative practice.

Time management under pressure: The compressed five-day timeframe required discipline, efficiency, and critical decision-making in real time.

Tangible outcomes. The planning phase produced a coherent framework for the workshop, shaped through collective discussion and negotiation. Teams were established with defined responsibilities, enabling participants to engage in structured collaboration while retaining flexibility to adapt to unforeseen circumstances. The schedule itself functioned as a dynamic instrument, responsive to the evolving pace of work and the reflections of both mentors and students.

Table 3. Activity A2 / Plan: learning strategies evaluation

Cluster	Characteristics	Evaluation
1C/Construction – Active construction of knowledge	Active participation	Students contributed to the creation of the plan and assumed responsibility for its execution.
	Reflection	The plan was revised through iterative reflection and assessment of progress.
	Internal negotiation	-
	Mental modeling	Participants developed conceptual models of project implementation, anticipating dynamics and potential obstacles.
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	Planning and delivering a cultural event mirrored professional practice.
	Complexity of reality	The intensive timeframe and open structure introduced elements of uncertainty and complexity.
	Case-based problems	Organisation and task distribution required context-specific problem-solving.
	Multiple perspectives	Different teams and mentors contributed diverse approaches and interpretations.
3C/Collaboration – Social construction of knowledge	Collaboration	The plan was the product of joint work between mentors and students.
	Social negotiation	Discussions on objectives and tasks facilitated negotiation and alignment of perspectives.
	Leadership	Mentors guided the planning process while allowing students to take initiative.

Critique. Although the plan was ambitious and adaptable, the compressed five-day framework limited the depth of inquiry and the thoroughness of preparation. The accelerated pace stimulated engagement and energy yet risked superficial treatment of complex tasks. The absence of systematic documentation undermined the possibility of subsequent evaluation in how collective decision-making and adaptive strategies shaped the workshop's trajectory.

4.1.3. Activity A3 / Elements

Description. The kiosk was disassembled into its constituent components in an open-air workshop, where each element was cleaned and then categorised according to its respective function within the overall structure.

Pedagogical focus. Experiential learning: Students engaged directly with the physical material of the kiosk, gaining tactile and spatial understanding of its construction.

Analytical categorisation: The classification of components encouraged systematic thinking and the development of organisational strategies.

Embodied cognition: Handling and examining the elements provided a sensory and embodied dimension to learning, complementing prior mental modelling.

Problem-solving in practice: The disassembly and cleaning process required practical decision-making and adaptation to real conditions.

Tangible outcomes. The disassembly produced a clear inventory of the kiosk's constituent parts, accompanied by a categorisation system that distinguished elements by their functional and structural roles. This process generated both a physical and conceptual framework for subsequent restoration and design activities. The cleaning of components not only improved their condition but also revealed material details that informed further analysis.

Table 4. Activity A3 / Elements: learning strategies evaluation

Cluster	Characteristics	Evaluation
1C/Construction – Active construction of knowledge	Active participation	Students contributed through hands-on engagement with the kiosk's material components.
	Reflection	Teams discussed and agreed upon criteria for grouping and interpreting the components.
	Internal negotiation	-
	Mental modeling	The process of categorisation prompted adaptation of knowledge about the relationship between individual elements and the overall structure, form and function.
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	Disassembly, cleaning, and categorisation mirrored real conservation and restoration practices.
	Complexity of reality	The condition of the kiosk introduced unpredictability, requiring students to respond to material irregularities and deterioration.
	Case-based problems	Decisions about categorisation and treatment of elements demanded context-specific reasoning
	Multiple perspectives	Students approached the categorisation and material analysis from diverse educational backgrounds.
3C/Collaboration – Social construction of knowledge	Collaboration	The activity was carried out collectively, requiring coordination and shared responsibility.
	Social negotiation	-
	Leadership	Mentors provided guidance while allowing students to take initiative in practical tasks.

Critique. Limited time and resources may have constrained opportunities to explore the structural significance of individual components. Without complementary specialist input, students could develop an understanding that remains primarily procedural, lacking the structural and contextual depth necessary for informed conservation or design decisions. As systematic documentation was not undertaken during the workshop itself but only produced afetrwords, the process lacked a reliable record, weakening the basis for evaluation and diminishing its relevance to the original activities.

4.1.4. Activity A4 / Design

Description. Several students' teams, developed proposals for a new exhibition installation. Their work emphasised creative exploration, as different modes of presenting the kiosk's elements were designed and critically evaluated. Each group experimented with alternative strategies for display, testing how imaginative approaches to form, arrangement and interpretation could enrich the overall concept and inspire new ways of engaging with the structure.

Pedagogical focus. Applied design practice: Students engaged in the translation of conceptual understanding into spatial and visual strategies for exhibition.

Critical evaluation: The activity required students to assess the appropriateness and effectiveness of proposed modes of display.

Integration of prior learning: Knowledge gained from earlier phases—contextual, analytical, and material—was synthesised into design decisions.

Iterative reflection: The process encouraged students to refine ideas through critique and collective discussion.

Tangible outcomes. The activity resulted in a series of design proposals for exhibiting the kiosk's elements, each reflecting different interpretative strategies and spatial arrangements. These proposals were critically assessed within the workshop community, generating a body of evaluative insights that informed subsequent phases.

Table 5. Activity A4 / Design: learning strategies evaluation

Cluster	Characteristics	Evaluation
1C/Construction – Active construction of knowledge	Active participation	Students actively generated exhibition concepts, shaping knowledge through invention and design.
	Reflection	Evaluation sessions prompted reflection on design choices and their alignment with workshop objectives.
	Internal negotiation	Teams articulated and tested their ideas, adapting proposals in response to critique.
	Mental modeling	Students developed new mental models of how kiosk elements could be presented in space.
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	Designing exhibition modes mirrored professional curatorial and architectural practice.
	Complexity of reality	The task involved balancing aesthetic, functional, and contextual considerations, avoiding oversimplification.
	Case-based problems	Each exhibition proposal addressed site-specific conditions and interpretative challenges.
	Multiple perspectives	Students explored diverse approaches to exhibition, embracing ambiguity and plurality of meaning.
3C/Collaboration – Social construction of knowledge	Collaboration	Design work was carried out in teams, requiring coordination and shared responsibility.
	Social negotiation	Collective critique facilitated negotiation of interpretations and solutions. One concept was adopted through a joint decision.
	Leadership	Mentors guided the creative process, without imposing prescriptive solutions, enabling student initiative.

Critique. Although the activity successfully engaged students in applied design and critical evaluation, the timeframe limited opportunities for detailed development and testing of proposals. As a result, some concepts remained at a schematic level, lacking the depth of technical resolution or contextual integration. Greater emphasis on iterative prototyping and site-specific experimentation could have strengthened the outcomes and enhanced the pedagogical value of the exercise.

4.1.5. Activity A5 / Installation

Description. New installation components were fabricated in the open-air workshop, and both authentic and newly created elements were transferred to the exhibition site for assembly. Conceived to evoke Saša J. Mächtig's original axonometric drawing of the K67 kiosk, the installation sought to translate its conceptual clarity into a contemporary spatial and visual experience (Figure 2 and Figure 3).

Pedagogical focus. Material engagement: Students worked directly with both original and newly fabricated components, reinforcing their understanding of the kiosk's physical and structural qualities.

Applied fabrication skills: The activity required practical skills in making, handling, and assembling, bridging conceptual design with material execution.

Integration of authenticity and innovation: The juxtaposition of original elements with newly created components encouraged reflection on conservation, adaptation, and creative intervention.

Collective responsibility: The assembly process demanded coordination, teamwork, and shared accountability for the final installation.

Tangible outcomes. The installation phase produced a physical manifestation of the workshop's conceptual and design work. Authentic components were restored and integrated with newly fabricated elements, resulting in a hybrid structure that embodied both conservation and innovation. The assembled installation served as a focal point for public engagement, demonstrating the pedagogical and creative achievements of the workshop. Photographic documentation of the fabrication and assembly process provided a record of technical and organisational practices.

Table 6. Activity A5 / Installation: learning strategies evaluation

Cluster	Characteristics	Evaluation
1C/Construction – Active construction of knowledge	Active participation	Students actively fabricated and assembled components, shaping knowledge through direct practice.
	Reflection	-
	Internal negotiation	Teams negotiated approaches to fabrication and assembly, balancing technical feasibility with design intent.
	Mental modeling	Students refined mental models of the kiosk by translating conceptual designs into tangible structures.
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	Fabrication and installation mirrored professional conservation and exhibition practices.
	Complexity of reality	The combination of authentic and new components introduced complexity, requiring nuanced decisions about integration.
	Case-based problems	Site-specific assembly posed practical challenges that demanded context-sensitive solutions.
	Multiple perspectives	The integration of authentic and newly fabricated components required teams to negotiate conservation principles, structural constraints, and aesthetic decisions simultaneously.
3C/Collaboration – Social construction of knowledge	Collaboration	The installation was realised through collective effort, requiring coordination across teams.
	Social negotiation	Students and mentors negotiated strategies for fabrication, transfer, and assembly.
	Leadership	Mentors provided guidance while allowing students to take initiative in practical execution.

Critique. While the installation successfully translated ideas into material form, the timeframe limited opportunities for refinement and technical precision. Some newly fabricated components may have lacked the durability or craftsmanship expected in professional practice. Furthermore, the balance between authentic preservation and creative intervention was not fully interrogated, risking an outcome that privileged expediency over critical engagement with heritage values.

4.1.6. Activity A6 / Collective

Description. The workshop was formally concluded with the opening of the exhibition, accompanied by a performative evocation of the kiosk's everyday cultural presence.

Pedagogical focus. Public engagement: The exhibition provided an opportunity for students to present their work to a wider audience, situating the kiosk within a cultural and social framework.

Performative reflection: The evocation of the kiosk's everyday presence encouraged participants to consider its lived significance beyond technical or design aspects.

Closure and synthesis: The concluding event consolidated the outcomes of the workshop, integrating practical, conceptual, and communal dimensions.

Collective identity: The exhibition reinforced the sense of shared responsibility and achievement cultivated throughout the workshop.

Tangible outcomes. The collective activity culminated in a public exhibition that showcased both authentic and newly created elements of the kiosk, framed by performative gestures that highlighted its everyday cultural presence. This event functioned as both a material and symbolic conclusion to the workshop, consolidating its pedagogical aims and extending its reach to a wider audience. The documentation of the exhibition, as visuals and texts, provided a lasting resource for reflection and dissemination, situating the kiosk within broader discourses of heritage, design, and cultural practice.

Table 7. Activity A6 / Collective: learning strategies evaluation

Cluster	Characteristics	Evaluation
1C/Construction – Active construction of knowledge	Active participation	Students actively contributed to the exhibition and performative elements, shaping knowledge through public presentation.
	Reflection	-
	Internal negotiation	Teams negotiated how to represent their work collectively, balancing individual contributions with shared outcomes.
	Mental modeling	The exhibition reinforced students' mental models of the kiosk as both an architectural object and a cultural artefact.
2C/Contextualisation – Contextualisation of knowledge.	Authentic tasks	The public exhibition mirrored professional practices of heritage presentation and cultural programming.
	Complexity of reality	The performative evocation introduced interpretative complexity, situating the kiosk within everyday cultural narratives.
	Case-based problems	The exhibition required context-specific decisions about representation, audience engagement, and cultural framing.
	Multiple perspectives	Students and mentors embraced diverse approaches to presenting the kiosk, reflecting its multifaceted significance.
3C/Collaboration – Social construction of knowledge	Collaboration	The exhibition was a collective endeavour, requiring coordination across teams and disciplines.
	Social negotiation	Decisions about exhibition modes and performative elements were negotiated within the workshop community.
	Leadership	Mentors facilitated the event while allowing students to take responsibility for its realisation.

Critique. The concluding exhibition integrated the workshop's diverse strands and provided a coherent closure to the process. However, the choice of the installation site, resulted in a setting that was relatively isolated from the rhythms of urban life. The kiosk was not sufficiently exposed to the everyday interactions and flows of the city, which limited the intended engagement with broader publics. Therefore, the performative evocation of the kiosk's cultural presence remained largely symbolic, without the interaction with the lived realities of the urban environment. A location embedded more directly within the city's social fabric would have enhanced the authenticity of the performative dimension and strengthened the pedagogical and cultural impact of the exhibition.

6. DISCUSSION

The analysis of the six workshop activities against Jonassen's constructivist framework yields four principal findings.

Contextualisation (2C) and collaboration (3C) were the dominant pedagogical strengths. Across all activities, students consistently engaged with authentic tasks rooted in real conservation and design practice, encountered complexity and negotiated meaning through collective processes. The workshop community introduced multiple perspectives that enriched contextual reasoning. This aligns with Dewey's [12] argument that effective design education requires embedding students in real social and cultural conditions rather than abstracting them into controlled academic exercises.

Active knowledge construction (1C) was the least fully realised dimension. Structured reflection occurred without designated mechanisms across the phases, which limited students' capacity to articulate, test, and consolidate their developing mental models. Internal negotiation was further constrained by the compressed five-day timeframe. This represents a significant pedagogical gap: Schön [14] demonstrates that reflective practice is the mechanism through which design knowledge deepens. Without structured reflective moments, the workshop risked producing competent execution without the accompanying conceptual consolidation that transforms experience into transferable learning.

Documentation practices were insufficient for rigorous retrospective evaluation. Systematic documentation was not conducted during the workshop itself; records relied predominantly on photographic material and the lead tutor's reflective notes. Post-workshop conversations with students provided only limited analytical value, as responses were uniformly positive and focused

on the experience of physical work rather than on learning processes. This weakened the basis for evaluation and underscores a broader methodological challenge in practitioner-led research: the tools of reflection need to be built into the workshop design itself, not appended afterwards.

The campus location limited the cultural and performative potential of the final activity. The installation site, insulated the workshop from the rhythms of everyday urban life. Vygotsky's [13] emphasis on the social environment as constitutive of learning suggests that situating the kiosk within the city's social fabric would have generated qualitatively different interactions and meanings.

Although the findings derive from a single case, the analytical framework applied is not context-specific. It can be applied to comparable workshop formats in other architectural education settings, particularly those engaging with heritage, material culture, or community-oriented design. The specific conditions of post-Yugoslav modernist heritage gave the case its particular texture, but the pedagogical dynamics identified are likely to recur in analogous formats elsewhere.

7. CONCLUSION

Evaluating the workshop through the lens of constructivist learning theory proved both meaningful and productive, as this framework illuminated the strengths and weaknesses of the case in a systematic manner. Within this model, the three core components—active knowledge construction, contextualisation, and collaboration—served as analytical categories. The analysis confirmed that contextualisation and collaboration were adequately realised, while active knowledge construction revealed shortcomings, particularly in relation to structured reflection and internal negotiation. Despite these limitations, the workshop demonstrated its value as a pedagogical model in architectural education, providing a holistic environment where engineering, scientific, and artistic dimensions intersected through active engagement and collective practice. The findings also indicate that clear notes can be derived for the organisation of future workshops, especially regarding reflection, documentation, and broader community engagement.

Several limitations of this study merit acknowledgement (1) the findings are based on a single case study, which restricts the generalisability of conclusions; (2) data collection relied predominantly on photographic documentation and the lead tutor's reflective notes, without systematic observation protocols or student self-assessment instruments, which limits the rigour of interpretive claims; (3) the compressed five-day timeframe constrained opportunities for deeper reflection and iterative learning. Future research should address these limitations by: applying the same evaluative framework across multiple architectural workshop cases; incorporating student self-assessment and structured post-workshop interviews; and developing a standardised documentation protocol for constructivist-oriented design workshops. Such comparative studies would allow for more robust pedagogical recommendations and broader transferability of findings.

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