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Heuristic Framework for Heritage and Reuse Education: Evaluating Erasmus+ BIP Studios in Valencia and Istanbul

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Abstract. Architectural education today faces a critical imperative: to transform its traditional product-centric paradigm into a model that cultivates systems-thinkers capable of addressing the climate crisis and socio-cultural fragmentation. This paper proposes heuristic pedagogy as a transformative framework for architectural education, emphasising its capacity to promote collective responsibility, adaptive learning, and context-sensitive design. The argument is grounded in the experiential learning outcomes of two Blended Intensive Programmes (BIP) conducted in 2023: "Interventions on Contemporary Architectural Heritage" in Valencia and "Sustainable Cities and Communities" in Istanbul. The study analyses how discovery-driven heuristic methods (DDHM) - grounded in problem-based learning and iterative design cycles - can empower participants to navigate the complexities of heritage and reuse. In Valencia, participants re-envisioned a modernist complex as a porous civic hub that integrates infrastructure, community, and environmental responsiveness. In Istanbul, heritage sites were reimagined through multi-stakeholder perspectives, balancing tourism dynamics with local identity at an urban infrastructural scale. Through a structured methodological approach that encompasses virtual sessions, site visits, and participatory observation, both programs demonstrate the efficacy of DDHM practices, such as rapid prototyping, collaborative stakeholder workshops, and immersive observation, enabling context-sensitive, solution-based architectural proposals aimed at socio-ecological literacy. Analysis of the case studies reveals a duality in scale and approach, with Valencia focusing on localised heritage intervention and Istanbul on systemic urban reintegration. The findings highlight the significant value of heuristic methods, demonstrating their transferability and scalability in mediating complex urban challenges. The article concludes by calling for schools of architecture to evolve into laboratories of co-creation, embedding heuristic pedagogy as a core competence for the future of the discipline, and repositioning heritage as a living narrative that serves as a catalyst for resilient practitioners.

Keywords: Heuristic, Framework, Transformation, Pedagogy, Education

1. Introduction

1.1 Repositioning heuristic pedagogy in architecture

Architecture as a discipline finds itself at a critical juncture, confronted with imperatives such as climate urgency and socio-cultural fragmentation. Traditional pedagogical models, often anchored in product-centric paradigms, increasingly fail to address the complexities of contemporary built environments. These models risk cultivating conformity and aesthetic formalism rather than enabling adaptive, critical and socially responsive practice.
The research stems from two simple questions: how did the heuristic pedagogy applied in the BIPs promote interdisciplinary collaboration skills among students of architecture and related fields, and what decision-making and design criteria emerged in the heritage reuse workshops, and to what extent were they influenced by local conditions (Valencia and Istanbul)?
There is an imperative to reimagine architectural education as a practice of collective responsibility. Heuristic pedagogy, based on discovery-driven, iterative learning, enables both disciplinary and non-disciplinary participants to engage actively in knowledge creation and civic agency. This approach contrasts sharply with conventional product-based models, which risk reinforcing conformity rather than promoting innovation.

1.2 Heuristic Theory

Heuristic pedagogy draws on interdisciplinary insights, primarily from the work of Daniel Kahneman in behavioural economics and Donald Schön's theories on the reflective practitioner [1]. Kahneman's exploration of heuristics as cognitive shortcuts for decision-making under intense scenarios of uncertainty, and Schön's emphasis on a provocative and almost empirical "learning by doing", situates architectural education in iterative cycles of reflection and action [2].
Invoked as a divergent set of arguments for theoretical disciplinary convergence, these principles can resonate with architectural practice in both conservation and reuse, where context-sensitive, iterative approaches are essential for navigating layered "histories" and conflicting stakeholder priorities, thereby complicating clear decision-making relations.

1.3 Heritage Discourse

This argument acquires further depth when positioned within the evolution of critical heritage discourse. The classical polarity between Viollet-le-Duc's rational restoration and John Ruskin's ethical refusal of intervention, followed by William Morris's *ethos* of material integrity, continues to frame architectural debates. Françoise Choay's critical interventions expanded this debate into a socio-ecological domain, emphasising the responsibility of heritage not as a static artefact but as a living, dynamic narrative.
Reinterpreted through heuristic pedagogy, these legacies can be synthesised into what we term a binding resourceful synthesis: a methodological approach that assembles diverse resources and perspectives into adaptive frameworks, capable of reconciling past values with present urgencies. By juxtaposing Le Duc's technical rigour with Ruskin's ethical imperatives and Choay's socio-ecological critique, architectural-heritage education can move towards capacitation of architects to balance material authenticity with efficient strategies for renovation and sustainable urban growth [3].

1.4 Global Imperatives and Blended Intensive Programmes

This transition is not optional. The built environment accounts for nearly 40% of global carbon emissions, rendering the reuse of existing structures a strategic necessity [4]. Yet sustainability cannot be reduced to environmental metrics alone; it must equally encompass the safeguarding of cultural identities and the equitable inclusion of community voices. Current curricula often fall short in these respects. Studio-based models tend to privilege formal aesthetics over systemic challenges, such as climate adaptation or participatory design, a gap that is particularly evident in heritage contexts, where historical significance and contemporary functionality must be reconciled.
The Blended Intensive Programmes (BIPs) developed in Valencia's *Escuelas Profesionales San José* [5,6] and in Istanbul's Sustainable Cities and Communities provide concrete illustrations of how heuristic methods can transform architectural pedagogy. In these programmes, the conventional studio framework was reframed into porous, field-based exchanges that embedded students, communities, and policymakers in shared workshops. In Istanbul, participants were challenged to reinterpret heritage sites at the scale of urban infrastructure, navigating tourism dynamics alongside local identity. In Valencia, the focus fell on a modernist school complex whose programmatic decline mirrored broader community-city tensions, with heuristic tools such as risk assessment and value-based design exercises enabling students to identify vulnerabilities, including climate risk and social segregation, while proposing interventions respectful of both tangible and intangible heritage.

1.5 Persistent Challenges

In light of the opportunities these events present, we can also observe that some challenges persist. Despite discernible progress, significant gaps persist between theoretical aspirations and practical execution, stemming from a "strategy-tactic dichotomy".
While heuristic approaches underscore stakeholder collaboration, their execution remains fragmented and complex across both decision-makers and decision-takers. Valencia highlighted the challenge of balancing

academic programmes with community engagement and client-based briefs, which often marginalise more divergent approaches as a result. A shift from studio-based to field-oriented learning (as a possible collaborative politics of production as seen in both case studies) can only mitigate this by considering a horizontal and real-time negotiation of emerging and unforeseen conflicting priorities.

For instance, the *Escuelas* complex's segregation from its surroundings was not only attributed to physical walls but also to institutional inertia, a challenge that is rarely addressed in academic settings. To overcome such factors, reuse practices must evolve into an open set of tools to collective design approaches and only then advance toward the intended solutions.

The case of Istanbul highlights the challenges associated with inclusivity, particularly in contexts involving diverse stakeholders, including academia, public institutions, and private actors. Despite the widely advocated value of inclusive participation, power asymmetries frequently impede meaningful engagement. This case demonstrates how the need for more structured frameworks can engage all relevant agents, such as co-creative design groups or policy-simulation exercises, in the development of mobility infrastructure in a megacity.

Therefore, this paper proposes to move beyond descriptive accounts of these case studies and toward a systematic analysis of their pedagogical and scientific reliability. By examining how heuristic pedagogy enables adaptive, collaborative and community-centred approaches to heritage and reuse, the paper aims to articulate the conditions under which architectural education can meaningfully and efficiently contribute to rethinking our current notion of equitable built environments.

2. Methods

Qualitative and quantitative features used in this study are a structured methodological approach that included virtual sessions, site visits, and participatory observation. This approach enabled a direct analysis of the programs' effectiveness based on the insights from two specific participants (the authors of this article).

The research used several qualitative methods to assess the heuristic pedagogy. Participatory observation was used to document how students engaged with the sites and with each other. Also, students conducted informal research by wandering through neighbourhoods and interacting with locals to gather perspectives that countered official narratives. The study also analysed the content and nature of group discussions, final presentations, and reflective journals to understand the decision-making and design criteria that emerged. In addition, quantitative aspects were analysed to compare the two BIPs, such as participant numbers, logistics, work session hours, group formation, composition, *et cet.* (Figure 1).

The methodology for both programs was based on Kolb's Experiential Learning Cycle matrix, which includes four stages: "Concrete Experience", "Reflective Observation", "Abstract Conceptualisation" and "Active Experimentation" (Table 1).

Table 1 - Methodology employed in the study based on Kolb's Experiential Learning Cycle matrix.

Stage of the cycle	Description	Activities Valencia	Activities Istanbul	Evidence Documentation
1. Concrete Experience	Direct immersion in real situations, engaging with the object of study.	Guided visits to heritage buildings in the historic centre; on-site surveying.	Fieldwork in urban areas with Ottoman buildings; direct observation of current uses and problems.	Photographic record; field notes; digital platforms.
2. Reflective Observation	Analysing the experience, identifying patterns, difficulties, and opportunities.	Group discussions on heritage diagnoses; intercultural exchange of impressions.	Classroom discussions on conflicts between preservation and contemporary use.	Digital platform forums; excerpts from post-activity interviews; entries in reflective journals.
3. Abstract Conceptualisation	Constructing models, principles, and hypotheses based on reflection.	Development of intervention criteria: material compatibility, reversibility, and environmental performance.	Development of conceptual schemes on adaptive reuse in Islamic and European contexts.	Assessment rubrics; group syntheses; presentation slides.
4. Active Experimentation	Practical application of concepts in new situations, testing solutions.	Development of reuse project proposals, presented in digital poster and presentation format.	Testing of architectural solutions through models and digital prototypes.	Final evaluated outputs; teacher feedback; recorded final presentations.

2.1 Framework & Objectives

The BIP falls under the Erasmus+ mobility activity under the *Key Action 2 – Cooperation among organisations and Institutions supporting Partnerships for Excellence*. The "European Universities protocol" aims to promote alliances among higher education institutions to develop cross-border cooperation toward top-quality education, research and innovation based on shared interests [7].

The Erasmus Guide Programme defines BIPs as «short, intensive programmes that use innovative ways of learning and teaching, including the use of online cooperation.» [7]. This mobility activity ("Blended Modality") is a «combination of physical mobility and a virtual component, facilitating collaborative online learning exchange/teamwork.» [7]. The implementation of new and more flexible mobility formats aims (at its core) to reach a broader student community [7].

The participating organisations must develop and implement an event composed of at least three higher education institutions (HEIs) from at least three EU Member States and Third Countries associated with the Programme. The receiving HEI must develop the physical mobility at its site or at any other venue of its region/country. These protocols seek to engage transnational [7] and transdisciplinary teams to work for a challenge-based learning to address contemporary challenges, including the United Nations' Sustainable Development Goals and other societal issues [7]. In the context of Erasmus, "Transnational" can be defined as «unless otherwise indicated, to any activity involving at least two EU Member States and third countries associated to the Programme».

As a blended modality, although the duration of the virtual component is not restricted, the duration of the physical activity must be established between 5 and 30 days for learners [7].

This innovative and flexible mobility format introduces a new learning experience and approach, representing an attempt to move away from conventional curricula. It achieves this by expanding the range of interactions and discussions and engaging tutors and students from diverse academic, professional and cultural backgrounds

in multimodal practices.

2.2 Case Studies

This study focuses on the modality of «blended short-term student mobility for studies», applied to architectural education. It draws on the experience of members of the *Faculdade de Arquitectura da Universiade do Porto (FAUP)* who participated in these activities, thereby reinforcing the experiential dimension of the selected cases. Conceived as an open canvas for architectural education, the research examines heuristic pedagogy through two BIPs conducted in 2023: *Universitat Politècnica de València (UPV)*'s *Interventions on Contemporary Architectural Heritage* and *İstanbul Teknik Üniversitesi (İTÜ)*'s *Sustainable Cities and Communities* [8].
As outlined in Figure 1 (Objectives), in line with the protocol guidelines, both programs framed their objectives around advancing the UN's 2030 Sustainable Development Goal 11 (Sustainable Cities and Communities) [9], yet they diverged in their methodological focus. While both case studies centred on heritage as a pathway to sustainable urban development, their analytical lenses differed. Valencia's BIP focused on architectural heritage recognition and intervention within the context of city-community dynamics, focusing on adaptive reuse and material authenticity [10]. In contrast, Istanbul's program treated cities and communities as broader case studies, integrating themes like urbanism, tourism, and heritage as interconnected drivers of sustainability.
The participating body had a diverse number of eligible students within its university requirements from both workshops. The composition of the two workshop participants was determined by selecting participants from three cycles of study: master, post-graduation and doctoral programmes. In accordance with the student selection criteria of FAUP, students should be enrolled in the fourth and fifth year of the Integrated Master programme *(MIARQ)* or in the Doctoral programme *(PDA)* at FAUP. Student selection was based on overall course performance for Valencia and an average of Design Studio results for Istanbul. Both relied on a motivation letter as a further selection criterion, given equal weighting. For Istanbul, FAUP selected only four students; while for Valencia, the number of pre-selected students ranged from four to eight and later expanded to 11. In both BIPs, universities selected students based on their current-year course group, except for Granada in Istanbul, which used an average base programme. The two case studies differed in their study *corpora* and methodological focus.

2.2.1 Universitat Politècnica de València (UPV): "Interventions on Contemporary Architectural Heritage"

The primary objective of the UPV BIP was to promote appreciation of contemporary heritage and to advocate for contextualised design solutions through the careful consideration of its research case. The case study, EPSJ, was designed and built between 1961 and 1968 by architects Cayetano Borso di Carminati González and Rafael Contel Comenge in Valencia, Spain [11].
Participant schools and sample (teachers (T) = 12 ; students (S) = 28):

- *École Nationale Supérieure d'Architecture de Montpellier* (ENSAM) (Tutors (T):1; Students (S): 3)
- *TU Berlin* (TUB) (T: 2; S: 8)
- *Faculdade de Arquitectura da Universidade do Porto (FAUP)* (T: 3; S: 11)
- *Univerza v Ljubljani* (UL) (T: 3; S: 6)
- *Universitat Politècnica de València* (UPV) (T: 3)

2.2.2 İstanbul Teknik Üniversitesi (İTÜ): "Sustainable Cities and Communities"

The main objective of the ITU BIP was to diagnose, discuss and compare three different urban clusters: Istanbul (metropolitan), Safranbolu (rural), and Amasra (coastal town). Drawing on other disciplines, tourism impacts on urban, natural and cultural heritage were used to propose and improve sustainable cities and community models. The methodology framework was first applied in Istanbul, and only later, after guided visits to the smaller towns, were we able to draw the same conclusions on the work session prior to the final presentations [12].

Participant schools and sample (teachers (T) = 16; students (S) = 38):

- *İstanbul Teknik Üniversitesi (İTÜ)* (T: 3; S: 7)
- *Karabük Üniversitesi (KBÜ)* (T: 2; S: 6)
- *Państwowa Akademia Nauk Stosowanych w Nysie (PANS)* (T: 3; S: 6)
- *Faculdade de Arquitectura da Universidade do Porto (FAUP)* (T: 2; S: 4)
- *Universidade Complutense de Madrid (UCM)* (T: 1)
- *Universidade de Málaga (UMA)* (T: 2; S: 4)
- *Universidad de Granada (UGR)* (T: 3; S: 11)

2.3 Participants & Activities

As part of the available guidelines for BIP implementation, there is no established regulation or requirement regarding the workshop structure. As such, a comprehensible system for comparative analysis based on the workshop organisation was formalised, comprising the most relevant topics, as shown in Figure 1.
From a "logistical" standpoint, Erasmus+ mobility funds were distributed accordingly, even within Turkey's specific status as a third country associated with the programme. Each participant received a daily stipend of €70 for seven days, covering two travel days and five days of accommodation and subsistence as registered in Figure 1 - Logistics. Both institutions provided basic refreshments, such as water and snacks, and Valencia also offered a vegetarian lunch option. Valencia also promoted group cohesion by inviting tutors to organise a collective dinner, at which participants exchanged traditional dishes from their regions. In Istanbul, three traditional meals were arranged; however, the workshop coincided with Ramadan, which posed additional challenges for scheduling shared activities.
Regarding "participants", the ratio of tutors to students varied, as seen in Figure 1. The Istanbul programme, timed to coincide with the academic calendar, had fewer tutors relative to the number of participants. The Valencia workshop, timed before the academic term, had a higher tutor/student ratio despite a smaller cohort.
"Virtual mobility" characterised the modality and influenced the expected outcomes by introducing a framework of user-friendliness into the overall process, as both programmes included compulsory attendance of the same duration, but with different formats, as seen in Figure 1 - Virtual Mobility. Istanbul adopted a "traditional" presentation-based approach, in which lecturers disseminate research findings unidirectionally. Valencia, on the other hand, introduced a rapid-fire debate format structured around three scales: location and site, new construction and models of approach to heritage. While this debate model developed students' interpersonal and critical thinking skills, it inadvertently reinforced institutional ideologies by creating a "team" mentality that exacerbated inter-university rivalry during the physical workshop phase.
"Group" formation, registered in Figure 1, had both observed and perceived pedagogical effects. In Istanbul, randomised group assignments and mixed thematic roles (e.g., tutors and students from different schools) dissolved "school of thought" boundaries, reducing formal teaching constraints and producing less conditioned solutions by disciplinary conventions. In Valencia, the groups were self-organised but were influenced by prior virtual interactions and initial site visits conducted under a university-led framework; this structure inadvertently perpetuated institutional biases, with solutions reflecting thematic alignments predetermined by tutors' agendas.
Concerning the "physical mobility" category in Figure 1, both timetables consisted of site visits, seminars, working sessions and final presentations. By displacing students from their formal and cultural context, the visits were crucial activators for heuristic activities that, in addition to the traditional architectural survey and mapping of risks and vulnerabilities, encouraged students to search for values regarding the significance of the heritage beyond the more formal site visits. In Valencia, the site manager and a member of the *Escuelas* ecclesiastical body toured the complex and provided a very direct insight into the history and cultural development of the material and immaterial values embedded in the community. Also, students conducted empirical research outside of the regular site visit as part of a short, spontaneous "participatory process" by wandering the immediate surroundings. This led students to reassess their own position regarding their status as both "visitor" and "stranger" to the site's values. In Istanbul (as in other cities in the general program), although they had conducted guided tours across broad areas, the students had mostly made free site visits to the respective self-selected sites, giving them the freedom to interpret and question their built environment.

As addressed in Figure 1, under Physical Mobility, Seminars were held at different planes. There were two other presentations by architectural researchers at both onsite workshops. In Istanbul, an activist and journalist delivered a lecture on “architectural crimes” committed against the protected landscape.
On-site work sessions were primarily characterised by discussions initiated by the tutor with the students, which subsequently evolved into discourse among the students themselves. It is noteworthy that Valencia's programme encompassed twice the number of hours as Istanbul's, despite the two BIP programmes having the same official duration, as logged in Figure 1 under Physical Mobility work sessions.
The work sessions then followed a similar structure:

1. discussion of each group study topic;
2. schematic planning, site selection and analysis;
3. problem identification and strategy for possible solution;
4. design development from several design proposals;
5. final presentation.

In Valencia, the initial days of the workshop featured mid-term presentations by each group, followed by an open forum and questions, leaving only half a day dedicated exclusively to formal final presentations and an open discussion of the overall workshop. In Istanbul, the duration of the final presentations was comparable to that in Valencia, as shown in Figure 1 under Physical Mobility’s Presentation, although the tutors asked questions at the end of each presentation.

	Blended Intensive Programme	
	Universitat Politècnica de València (UPV)	**İstanbul Teknik Üniversitesi (İTÜ)**
Title	*Interventions on Contemporary Architectural Heritage*	*Sustainable Cities and Communities*
Objectives	1. to enable trans-national and trans-disciplinary teams to work together to solve challenges, specifically those related to the UN Sustainable Development Goals and other societal challenges. 2. to develop their recognition of the value of certain buildings. 3. to promote a criteria and awareness of what it means to build on what already exists. 4. to confront the dichotomy between the permanent built environment and the necessity of evolution of building forms and techniques. 5. to participate in workshops with specialists in the field, from different regions and nationalities, offering a reflection on the intervention criteria.	1. to recover from the covid-19 health crisis associated with decarbonisation in environmental, social and economic aspects in the fight against the climate crisis. 2. to focus on the post-growth paradigm and strong sustainability, framed within objective 11 - Sustainable cities and communities-, of the UN's 2030 Sustainable Development Goals. 3. to organise a multidisciplinary approach: urbanism and architecture, heritage, and tourism. 4. to confront the themes in 3 different laboratories: İstanbul, Safranbolu and Amasra; to study their fundamental differences in location, urban development, size and history. 5. to develop an analysis, reflection and collective and transversal results.
Logistics		
travel	from daily stipend	from daily stipend
accomodation	booked independently	booked independently
subsistence (event)	lunch + refreshments	lunch + refreshments
stipend (€ daily)	70	70
Participants		
universities	5	7
students (S)	28	38
tutors (T)	12	16
ratio S/T	2.33	2.38
Virtual Mobility		
virtual sessions	1	2
hours *	4.5	4
presentations	1	4
type	introduction to the workshop; work-session within universities: quick-fire questions	introduction to the workshop; 2 architectural practices examples; 1 architectural journalist
Physical Mobility		
start date	31/08/2023	12/04/2023
end date	04/09/2023	17/04/2023
academic season	year break	mid term break
days	5	5
site (type)	1 architectural complex: Escuelas Profissionales San José	3 cities: Istanbul, Safranbolu, Amasra
site visits (days)	0.75	3
seminar	2	2
seminar (hour)	2	3
work sessions (days)	3	1.5
presentation (days)	1	0.5
Groups		
number	5	5
students/group	5.2	7
proposals	5	5
development type	tutoring school	thematic of study
thematic choice	school speciality	domain speciality
theme description	UP: Heritage and design - "The ecologies of the memories" UL: Heritage and city - "The ecologies of the environment" UPV: Heritage and society - "The ecologies of the inhabitants" TUB: Heritage and reprogramming - "The ecologies of the space" ENSAM: Heritage and reconstruction - "The ecologies of the envelope"	GR1 - "Heritage & Memoryscape" GR2 - "Visibility & Image" GR3 - "Walkability & Acessibility" GR4 - "Soundscape & Stresscape" GR5 - "Green Infrastructure & Biodiversity"
tutor distribution	tutor/schools specialisation	random
group/member composition	TUB group + others free	free
organisation sample	strong sample of one university students: 3 groups university only + 3 groups with at least one student from a different university	balanced and equally distibution among groups
produced outcome	1. diagnostic heritage survey 2. interview inhabitants and neighbourhood survey 3. solution-based architectural proposals 4. constructive detailling models 5. sketches of ideation	1. sensory survey 2. field collection of perceptions and diagnostic 3. informative field data (Fulcrum app) 4. collective cartographies 5. sketches of ideation 6. map of controversies and site problems 7. solution-based proposals 8. photographic based-card game 9. solution-based data quantification

* note: the preparation videos the students had to visualise before the virtual sessions were not taken into account

Figure 1 - Comparative analysis: case studies of UPV and ITÜ. CC-BY-SA. [FAUP,UPV BIP call documents] © 2025.

3. Results

In this section, the paper draws on primary sources to provide a possible understanding of influential pedagogical commitments to the notion of reuse in architectural heritage. The experiential focus of the selected events as case studies, along with the emergence of methodologies for reuse, expands the field of education in the practice of architecture leaning-teaching dialectic. It demonstrates the opportunity to derive from the results of the established learning process (between Valencia and Istanbul's online sessions and onsite examples), expanding from «seamless activities of conditioning new uses in historical buildings to incorporate broader methods that combine the intangible meanings of "common" constructions (as heritage not yet officially protected) and their purpose in a sustainable future». Following the line of the article *Training Intervention on Contemporary Architectural Heritage through heuristic activities: values-based reuse designs for the Escuelas Profesionales San José, Valencia, Spain,* for the XIIth ReUSO Edition, this paper expands and integrates the same organisational structure, identifiable in three concurrent parts.

3.1 Assessing significance (values)

Evaluating the significance of a heritage building is a critical step in the adaptive reuse process. This assessment involves identifying and understanding the elemental values (historical, cultural, architectural, social, economic, *et cet.*) embodied by the building. The process typically includes comprehensive historical research, consultations with heritage experts and community engagement to gather diverse perspectives on the building's importance. This approach allows a holistic understanding of the nuances that build significance. A systematic evaluation provides the basis for activating relationships between values and stakeholders, thereby supporting informed decision-making.

As presented in the article during the online sessions, Valencia students identified that most of the values attributed to the case study were architectural qualities, such as physical features. Initially, this was based on the familiar vocabulary from their academic training. Following the on-site activities and the motivation to verify their judgments and to seek other values of architectural importance, several new lexical propositions emerged. The guided tour (as well as the informal student-led tour) was crucial in countering the official narratives of heritage assessment with the existential view of the real neighbourhood, gathered through occasional interviews and more informal investigative practices (sitting on a bench, looking at residents in their homes, buying water from local shops and cafes). This short "participatory process" has been translated into a hybrid map that accesses the social significance of the heritage complex through an emotional framework.

The map in Figure 2 illustrates its classification as "exceptionally significant", to the volumes of the complex as having an impact on its image in relation to the city (these include old dividing elements still visible in the current boundaries), and as 'high significance', the elements of the school programme, including the gallery of classrooms and the pavilion of the vocational school. This technical map produced a threshold map, which developed the objective landscape of the challenge into an immaterial sense for the intervention's strategy. Material attributes were important for confirming its local roots, as expressed in the quality of ceramics across different spaces and facades, a mix of metallic and concrete structures, visual frame alignments, expressive metallic window frames, programmatic works of art, and expressive pavements that define potential activities.

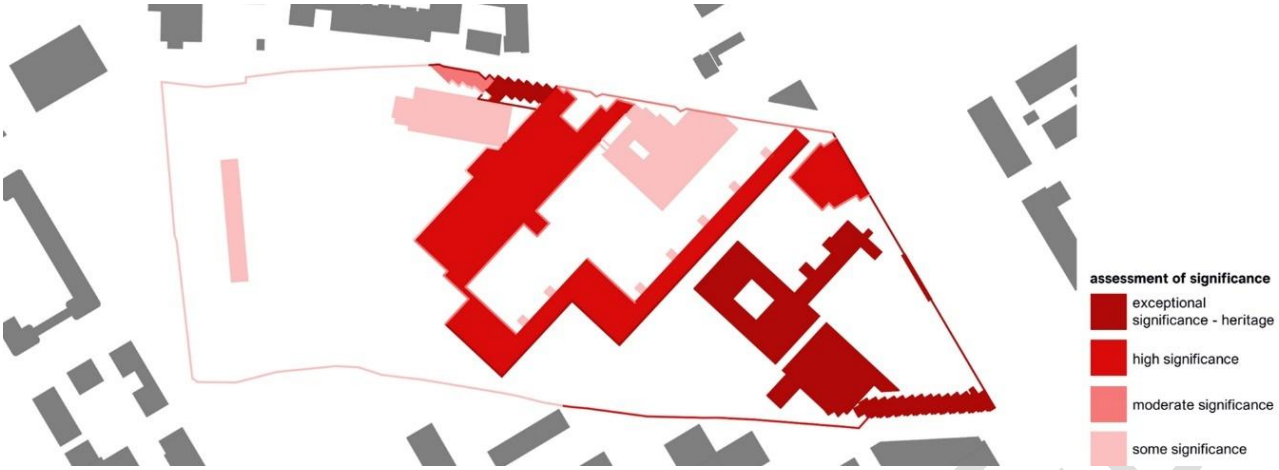

Figure 2 - Assessment of significance map. CC-BY-SA. [BIP Valencia] © 2023, Azar Mohammadpanah, Gabriela Souza, Inês Andrade, Margarida Pinhal, Maria Neves, Sérgio Magalhães, Sofia Câmara (FAUP).

In Istanbul, the mapping of significance (values) was not a direct factor for analysis. Most assessments were based on formal tours, complemented by free site visits for consulting. The language, Turkish, and the time of the visit, during Ramadan, made it difficult to contact locals and gather an additional sense of the place. Most of the values appointed were merely physical and architectural attributes correlated with the theme of the work. For example, "Visibility and Image" map (Figure 3.a) pointed the water and ground pollution, lack of visual urban alignments, monumental buildings, statues, characterisation of streets, the constant presence of cats, *et cet*. "Heritage and Memoryscapes" mapping (Figure 3.b) was mostly produced on the characterisation and identification of notable monuments and main historical routes.

(a) (b)

Figure 3 - Collective maps on vulnerabilities and solutions for Istanbul: (a) Visibility and Image. CC-BY-SA. [BIP Istanbul] © 2023, Said Uludag (ITÜ), Berat Uzunal (KBÜ), Tetela Mariusz (PANS), Maria Inês Neves (FAUP), Halima A. Ahannach (UMA), Natalia G. Lozano (UGR), Andrea A. Ruz (UGR); (b) Heritage and Memoryscape. CC-BY-SA. [BIP Instabul] © 2023, Emily Marszal (PANS), Arthur Dinis (FAUP), José Aragón (UMA), Saúl Morillo (UGR), Beyzanur Tokgoz (ITÜ), Taha Ozcan (ITÜ), Bilgen Hacialioglu (KBÜ).

3.2 Identifying vulnerabilities (risks and problems)

Identifying vulnerabilities in adaptive reuse involves assessing risks such as structural integrity issues, outdated building codes, environmental hazards, and financial contexts. Acknowledging these challenges is essential to developing strategies that ensure the building's safety, code compliance, and functionality in its new purpose. However, this established set of common entry points to the assessment is insufficient to identify the deeply rooted ideological, social and cultural conditions that mainly influence the development of intervention priorities and the correlations among all sides of the common problem setting.

In Valencia, both online and physical vulnerability analyses confirmed that the modern complex has been outgrown by the city and that its design principles have been disregarded, as evidenced by the several quick fixes surveyed and summarised in Figure 4. Also, an additional internal wall on the classroom gallery was the cause of blocked ventilation in the classrooms, resulting in the current demand for improvement of the climate condition of the building, intensified by the interiors of various types of infrastructure without proper care. At the social and urban levels, the lack of initiative and integration by the administration and site management was cited as resulting in the segregation of the school site from its immediate urban setting and neighbourhood dynamics. In light of the observed material decisions, the site required a more rigorous and effective decision-making protocol to safeguard its authenticity and integrity.

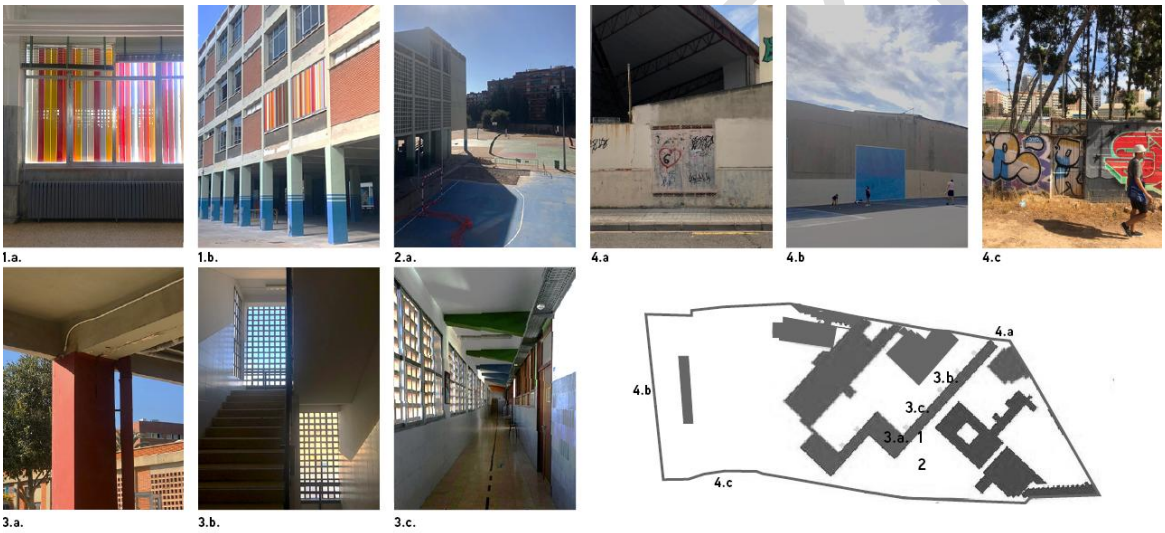

Figure 4 - Different quick fixes. CC-BY-SA. [BIP Valencia] © 2023, Cristina Tasso (FAUP).

Similar to the value assessment process, all groups in Istanbul mapped their vulnerabilities according to the themes. For example, in “Walkability and Accessibility” (Figure 5), most of the identified vulnerabilities were correlated with topography, materials, and access facilities, encompassing both pedestrians and other modes of transportation. These vulnerabilities were materialised in the form of interrupted and broken paths, as well as harsh topography, creating many inaccessible paths for both pedestrians and transport.

Figure 5 - Site survey on the different cities: Walkability and Accessibility. CC-BY-SA. [BIP Istanbul] © 2023, R. Büşra Çakir (ITÜ), Ilgaz Atalay (KBÜ), Marszał Damian (PANS), Cristina Tasso (FAUP), Natalia C. Tapia (UMA), Juan C. S. Guzmán (UGR), Patricia M. Martinez (UGR).

3.3 Design Proposals

The following texts are summaries produced by the group participants to illustrate the design solutions they have created. They are contrasting in nature and represent opportunistic attempts to leave institutional frameworks by pursuing outside of normalised, expected outcomes.

3.3.1 User-centred interventions on contemporary heritage: assessing heritage significance thresholds by Azar Mohammadpanah, Gabriela Souza, Inês Andrade, Margarida Pinhal, Maria Neves, Sérgio Magalhães, Sofia Câmara. Tutor: Pedro Freitas (FAUP)

«In the current era, ambiguity is a potent instrument for mediation, analysis, and recognition of secondary narratives embedded in contemporary heritage projects, acting as a catalyst in the pursuit of immediate solutions. This process begins by questioning boundaries of common knowledge and investigating the reasoning of preexisting elements in each context. Hence, through the examination of the limits of intervention lies the responsibility of considering time, space, and significance, where the imposition of absolute conditions is no longer a sustainable answer to contemporary necessities.
Upon recognising the material configuration of a building, it also became clear that the socio-technical apparatus of the habitat defines the nature of the socio-cultural dispositive, which is present and actionable in the urban scenario. This procedure has the potential to reconcile conservation and reuse of a building, extending beyond programmatic boundaries. Both observable and non-observable conditions contribute to the tangible and intangible recognition of a site's values, conditions, and dynamics. This recognition resides within the disciplinary responsibility towards society, mediated by the demands of a situated practice.
In the case of *Escuelas Profesionales San José*, the act of demolishing a wall can be seen as a metaphor for inclusion, integration, and the possibility of appropriation. The enactment of unconditional access to the interior of a scholar/religious property may result in the impairment of the resident community, but it will undoubtedly impact the direct and indirect users and visitors, fostering a renewed engagement with the site as an appropriate place for collective prosperity. The proposal seeks to replan the thresholds that emerge from the void, with a perspective on public-private access and private-public service across different areas, thereby recovering the complex's purpose as a heritage asset within the community. It is therefore necessary to cease appealing to the authority of architecture and immerse ourselves beyond commonly accepted universal dogma. Demolishing walls is only a starting point towards a transformational impact on the heritage site of *Escuelas Profesionales San José*.» (Figure 6)

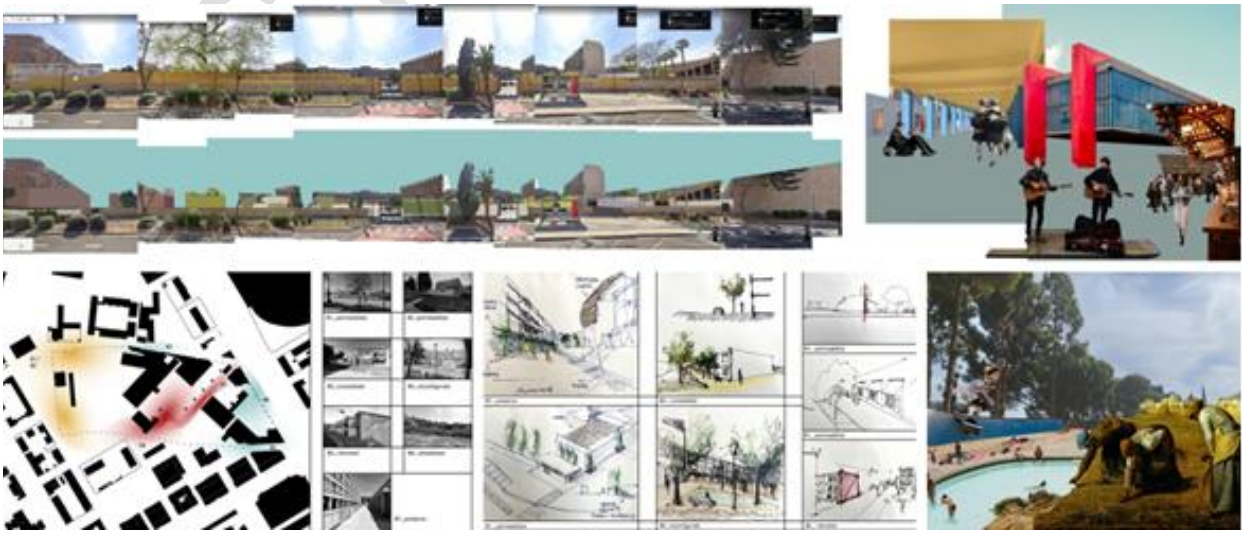

Figure 6 - User-centred interventions on contemporary heritage: assessing heritage significance thresholds: emotional mapping board. CC-BY-SA. [BIP Valencia] © 2023, Azar Mohammadpanah, Gabriela Souza, Inês Andrade, Margarida Pinhal, Maria Neves, Sérgio Magalhães, Sofia Câmara (FAUP).

3.3.2 The Ground-Floor: reconnecting the public use of the surroundings by Cristina Tasso (FAUP), Matthias Grabowski, Samuel Kleinschmidt, Tsvetelina Markova. Tutors: César Trujillo Moya and Ralf Pasel (TU Berlin).

«The proposal focused on a holistic approach between the building, use, weather, and time. The school community is constituted by a variety of social groups who use the area throughout the day. The wall, which constrains the complex block, serves as a pronounced barrier between the school block and the neighbouring city. Therefore, freeing the school grounds is essential for integrating the surrounding community.
Hence, the ground floor is broken apart to integrate the fluidity of people flows and the surrounding city, while returning to the modern free-plan principle. The street level is elevated at its highest point, around 1.5 m above the school ground. Thus, a park permeates the asphalt and restores the topographical terrain, regaining the pavement's porosity back to its farm settlements. Based on the city grid, the surrounding five minor squares regulate the entrances and walking axis, composing the park's accessibility. The pergolas serve as gathering places by providing refuge from the sun and are interconnected with the landscape's undulating design.
The proposed solution to the complex entails a privacy inversion, reversing the ground-floor program toward the school terraces. The vertical stratification of privacy – public to private – is rearranged considering the different levels of education: 1st and 2nd – secondary; 3rd – special needs and elementary; 4th (terrace) – private playgrounds. The ground floor captures the community's livelihood through two new programmes: the canteen and a community library. The canteen becomes a combination of a cafeteria, a canteen and a restaurant. Food becomes a social activator. At the park's centre, the bookshelves prompt a communitarian book exchange. The project fosters community integration through a conscious design towards a renewed urban planning» (Figure 7).

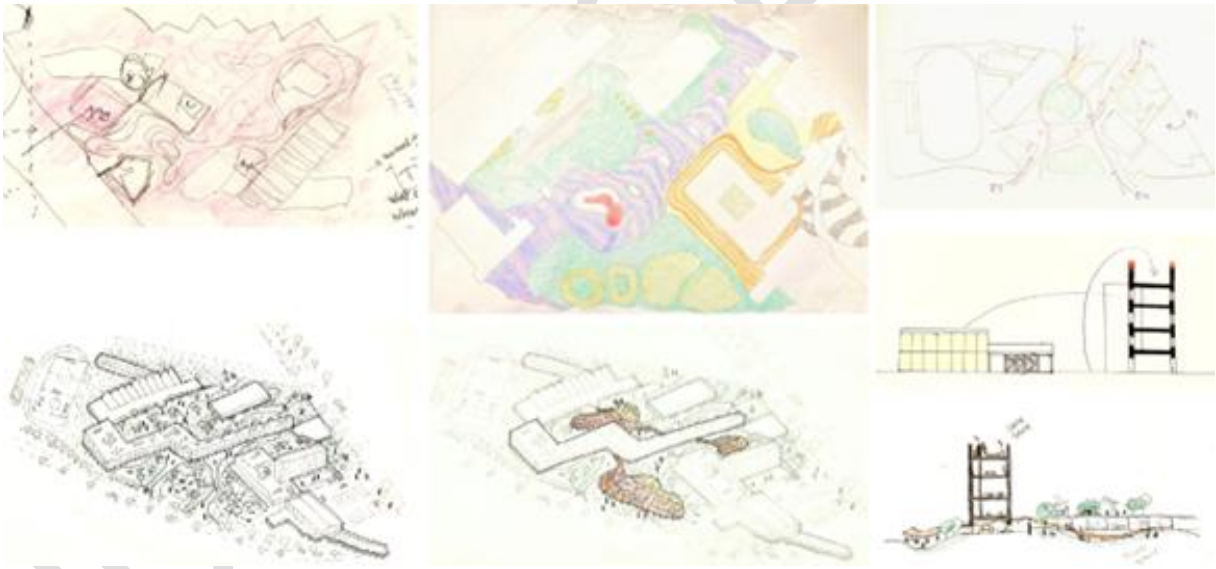

Figure 7 - The Ground-Floor: reconnecting the public use of the surroundings. CC-BY-SA. [BIP Valencia] © 2023, Cristina Tasso (FAUP), Matthias Grabowski, Samuel Kleinschmidt, Tsvetelina Markova (TU Berlin).

3.3.3 Bike-ability: implementing a bike lane at the Golden Horn's margin by R. Büşra Çakir (ITÜ), Ilgaz Atalay (KBÜ), Marszał Damian (PANS), Cristina Tasso (FAUP), Natalia C. Tapia (UMA), Juan C. S. Guzmán (UGR), Patricia M. Martinez (UGR). Tutors: Derya Güleç Özer, Demet A. Dinçay, Ecem Karabay (ITÜ), Elena Enciso (UMA).

«Based on the research by Derya Güleç Özer and others in the integration of Bike routes with the rail transport system in Zeytínburnu District, we were asked to extend the research proposal and continue the study on the

northern margin of the Golden Horn, as well as its integration in Amasra and Safranbolu. All cities faced the same issue of complex topography, except for Amasra. Both Amasra and Safranbolu's city grids exhibit integrated connectivity between paths and pavements, facilitating implementation even without bike lane separation. In Istanbul, particularly the area of study, discontinuity and fractions on the shore area, namely the pavements by the water, are often interrupted by different road crossovers, and the tram and other private infrastructures.

For its implementation in Istanbul, we first evaluated the potential application of the path through data collection with Fulcrum, using the same criteria as the supportive research presented below. The overall integration value for the complete path was 3,25/5,00. After the site visit, we identified six crossovers, each present in a section of the studied pathway, as these were the most disruptive. The solutions act as a means of integration towards the continuity of the urban tissue:

1. To distinguish pedestrians from bike lanes through the means of colour;
2. To integrate urban furniture;
3. To regulate a traffic limit to ensure safety for the bikes in traffic;
4. Redesigning the public space surrounding the private hospital, by separating lanes and re-organising the traffic hierarchy;
5. Contrary to the termination of the sidewalk by the river, making it compulsory to crossover, the solution ensures the extension of the pavement alongside the river margin;
6. The integration of a new bicycle lane outside the tram line.» (Figure 8)

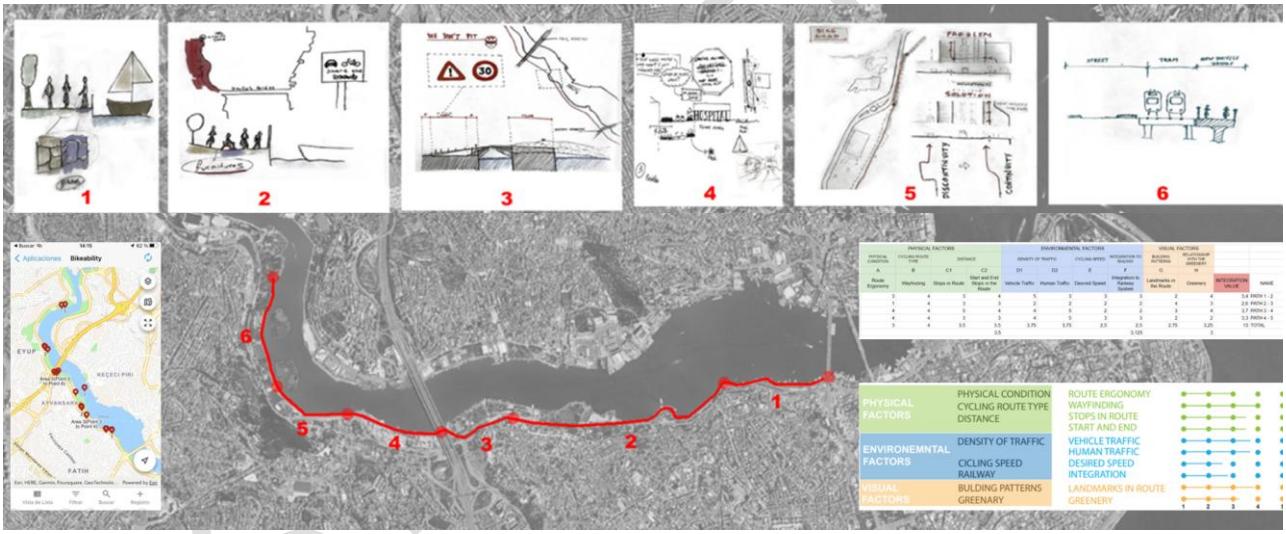

Figure 8 - Bike-ability: implementing a bike lane at the Golden Horn's margin. CC-BY-SA. [BIP Istanbul] © 2023, R. Büşra Çakir (ITÜ), Ilgaz Atalay (KBÜ), Marszał Damian (PANS), Cristina Tasso (FAUP), Natalia C. Tapia (UMA), Juan C. S. Guzmán (UGR), Patricia M. Martinez (UGR).

From the foundational article for the XIIth ReUSO edition, "Training Intervention on Contemporary Architectural Heritage through heuristic activities: values-based reuse designs for the *Escuelas Profesionales San José, Valencia, Spain*" and the authors personal experience in the BIP events, this paper amplifies its call for pedagogical transformation through the inclusion of Istanbul's case study: a strategic expansion that enriches the discourse on heritage reuse.

Analysis of both case studies reveals a compelling duality in scale and approach: Valencia's surgical precision in heritage intervention - emphasising community participation, adaptive reuse and respect for pre-existing materiality - contrasts with Istanbul's systemic reintegration of urban connectivity, where architectural solutions acted as catalysts for large-scale socio-spatial networks. These divergent yet complementary outcomes underscore a common imperative: architectural education must evolve beyond static methodologies to embrace heuristic pedagogy as a dynamic, values-driven framework. The Valencia experience demonstrated how heritage can be revitalised through localised, empathetic design, while the Istanbul proposals illustrated the transformative power of stitching fragmented urban fabrics into cohesive ecosystems. Together, they signal a

pedagogical evolution - one that positions heritage not as a relic to be preserved, but as a living medium for new educational frameworks.

4. Discussion

The two BIPs analysed in this study demonstrate that heuristic experimentation can be a useful approach to teaching architectural design. By putting students into situations where there are no clear answers – between different subjects, different institutions and people from the community – these programmes have shown how important it is to work out what to do when there are different things to do and to make knowledge together. This approach demonstrates how architectural teaching can move beyond a focus on products while maintaining strict standards.

The findings match heuristic pedagogy with well-known experiential learning frameworks, especially Kolb's cycle of experience, reflection, conceptualisation, and experimentation, and Schön's model of reflective practice. Students in both cases showed they could get through these stages, moving from direct experiences of heritage contexts, through thinking and coming up with ideas, to designing experiments. The idea is that these methods can help future architects strike a balance among different levels and values, such as objects and cities, memories and modernity, and big ideas and practical steps.

However, the programmes also showed that there remain significant problems and *lacunae* in architectural education. Some of the issues we've identified include the dominance of Western academic ideas, a power imbalance between teachers and students, and strict rules that impede natural conversation. For example, we saw that guided tours weren't very deep, that there was too much presentation and not enough discussion, and that prescriptive formats stopped people from just getting on with things. These conditions made it hard to have more productive and relevant debates.

From a disciplinary perspective, the study indicates that short-term mobility, when supported by digital tools, has the potential to scaffold decision-making in heritage reuse projects. Yet significant limitations emerged: the compression of design iterations, inconsistencies in assessment criteria across institutions, and uneven digital preparedness among participants. Addressing these requires institutional commitment to embed heuristic approaches as core competencies rather than optional pedagogical experiments.

A broader reflection also arises on the transformative role of architectural schools. If they are reconceptualised as “laboratories of co-creation”, their *curricula* can incorporate socio-ecological literacy and cultural sustainability metrics alongside technical rigour. Such reorientation would foster empathy, systemic thinking, and the capacity to engage with communities in collective value assessment processes. Examples from Valencia demonstrate how participatory traversing of neighbourhoods, daydreaming, and attentive listening to local narratives contributed to socio-technical evaluations of meaning and significance. These methods stand as counterpoints to protocol-driven exercises and illustrate the pedagogical richness of heuristic practices when opened to imaginative and divergent engagement.

Ultimately, the discussion points towards the necessity of integrating these practices into a long-term evaluative framework. Only through structured longitudinal assessment of BIP impacts—tracing their influence on career trajectories, professional competences, and institutional change—can the true potential of heuristic pedagogy be measured and advanced.

5. Conclusion

The findings of this research demonstrate that Erasmus+ BIPs provide fertile ground for advancing heuristic, discovery-driven pedagogy in architectural education. The two cases analysed demonstrate that when adequately structured, such programmes enable students to progress through experiential learning cycles, acquire collaborative competences, and apply conservation-oriented design criteria in heritage reuse contexts.

The study provides three key insights. Firstly, it demonstrates that heuristic pedagogy is compatible with experiential learning and reflective practice. Secondly, it shows that short-term mobility formats can support decision-making protocols for heritage reuse when supported by digital infrastructures. Thirdly, it highlights that rigid pedagogical protocols, uneven institutional criteria and digital asymmetries remain obstacles that must be addressed.

The implications for architectural *curricula* are unambiguous. Heuristic methods should be recognised not as peripheral tools but as foundational competences, equipping future architects to act as facilitators of systemic change. To address these challenges, schools of architecture should consider reconfiguring their structures and functions to establish co-creation laboratories. In these laboratories, students would engage with communities, negotiate conflicting values, and incorporate cultural as well as environmental sustainability metrics into design processes.

In the context of escalating socio-ecological crises, such transformations are imperative. The re-establishment of architectural pedagogy as a catalyst for sustainable futures is dependent upon the cultivation of empathy, systemic thinking, and iterative design engagement. The overarching objective is to nurture architects who do not function as isolated auteurs, but rather as mediators of collective agency. These architects must possess the capacity to interweave heritage, resilience, and social equity into the built environment from reuse and conservation approaches.

6. Acknowledgements

7. Authors Contributions

Magalhães, Sérgio: Conceptualization; Data curation; Methodology; Formal analysis; Supervision; Validation; Writing – original draft.
Tasso, Cristina: Investigation; Data curation; Visualisation.
All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work.

8. Funding

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