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Heritage fieldwork for values-based design in higher education: a serious gaming approach for citizen engagement in Faro, Portugal

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Abstract

Purpose – This paper aims to explore the integration of values-based design and serious gaming for heritage fieldwork in architectural higher education. By employing serious gaming, the study seeks to develop user-friendly tools that facilitate and motivate the participation of diverse stakeholders in the redesign process. This approach enhances the recognition and conservation of heritage values associated with tangible and intangible attributes in the city of Faro, Portugal, ultimately contributing to the specialization of heritage architects.

Design/methodology/approach – The graduation design studio employs a three-step methodology involving eight master's students in the city of Faro. Initially, students mapped values associated with buildings and neighborhoods. Subsequently, they developed redesigns using a values-based approach. Finally, they conducted impact assessments through self-evaluation of their redesign solutions. Traditional methods such as interviews, questionnaires and focus groups were adapted to include interactive tasks like treasure hunts, quizzes, 3D games, card games and board games. This methodology engaged various target groups, including schoolchildren, university students, heritage specialists and the elderly, to ensure a comprehensive understanding of community values.

Findings – The findings demonstrate the effectiveness of heritage fieldwork with serious gaming tools to foster citizen engagement and stakeholder collaboration in values-based design. The study confirms that serious gaming facilitates participation and enhances understanding of heritage values for both master's students and citizens. Despite being new to the master's students, this method proved successful in engaging diverse stakeholders and collecting relevant data. The results highlight the potential for local municipalities, such as Faro, to apply these approaches in heritage planning. This may lead to improved conservation efforts and sustainability while fostering greater citizen involvement in the decision-making processes related to their built heritage.

Research limitations/implications – This study is limited by its small sample size, short fieldwork duration and the context-specific nature of the case study in Faro, Portugal. The reliance on master's students as facilitators and the adaptation of serious gaming methods to local conditions may affect the generalizability of the findings. Further research should include longitudinal studies, larger and more diverse participant groups and comparative analyses across different cultural contexts. The implications suggest that while serious gaming can enhance values-based design and citizen engagement, its effectiveness depends on careful adaptation to local needs and ongoing evaluation of its impact on heritage planning processes.

Practical implications – The integration of serious gaming into heritage fieldwork offers practical tools for educators, municipalities and heritage professionals to foster citizen engagement and collaborative decision-making. The methods developed can be adapted for use in other cities and educational settings, supporting participatory urban and heritage planning. Local governments can leverage these approaches to better understand community values, inform policy and improve the sustainability of built environments. The study provides a replicable framework for training future architects in values-based design, equipping them with skills to facilitate inclusive workshops and mediate between diverse stakeholder interests in real-world heritage conservation projects.

Social implications – By involving citizens of all ages in the redesign of their built environment, this approach strengthens community agency and trust in heritage planning. Serious gaming methods help bridge generational and cultural gaps, making participation accessible and enjoyable for groups often excluded from traditional engagement processes. The study demonstrates that such participatory practices can foster empathy among future architects and increase public awareness of heritage values. Ultimately, this contributes to more inclusive, democratic and sustainable urban development, empowering communities to shape their environments in ways that reflect their collective values and identities.



Originality/value – This study introduces an innovative approach by integrating serious gaming into the values-based redesign of buildings and neighborhoods. It bridges the gap between public and professional perspectives, offering a novel approach for engaging citizens in heritage planning. The research contributes to the limited body of work on values-based approaches by demonstrating their applicability and effectiveness in real-world settings. By involving diverse community groups and employing interactive serious gaming tools, the study provides a unique framework for understanding and preserving heritage values in architecture and urban environments, promoting more inclusive and sustainable design practices.

Keywords Fieldwork, Serious gaming, Citizen engagement, Cultural significance, Heritage education

Paper type Research article

1. Introduction

There is a wealth of research on architectural and urban design education, including heritage design. However, the exploration and implementation of values-based approaches to building redesign remain limited, as does citizen participation in these processes. Architects and urban planners often lack experience in values-based design, meaning a design process with awareness and control on what/how values influence decision-making. Many educational programs still adopt a “tabula rasa” approach, focusing on creating new values while potentially disregarding existing ones. By incorporating values from diverse sources, including citizens, redesigns can not only create new values but also restore, maintain, or enhance existing ones. This raises the question of how to promote a participatory, values-based approach in architectural higher education.

The practice of architecture and urban planning has traditionally overlooked the integration of social and ecological dimensions in the organization and redesign of buildings and cities (Lefebvre, 1991; Mostafavi and Doherty, 2016). This oversight has prompted design studios to redefine the potential of fieldwork, equipping future architects and planners with the skills needed to understand how the built environment is shaped by these processes (Doherty, 2019). Historically, architectural fieldwork focused primarily on site-specific factors such as location, orientation, materiality, and conservation status, often relying on observational methods. Even when engaging with society through surveys or interviews, the emphasis was typically on the physical building rather than on people’s values, needs, and aspirations (Cranz, 2016).

The roots of fieldwork can be traced back to the ethnographic methods pioneered by Bronislaw Malinowski, renowned for his immersive participant observation techniques. Anthropologists typically engage in long-term fieldwork, spending a year or more in a community to gain deep insights into daily life and social interactions (Doherty, 2017, 2019). This method, known as “thick description” (Geertz, 1973), seeks to uncover patterns and relationships that might otherwise remain hidden. In architecture, fieldwork can similarly teach practitioners to listen and incorporate cultural values into design (Ewing *et al.*, 2011). By engaging with local populations, architects can better understand which heritage attributes are valued and why, aligning with the participatory principles of the Faro Convention (COE, 2005). Thus, heritage fieldwork, which extends beyond mere sitework, not only enriches architectural practice but also empowers communities to actively participate in shaping their environments based on their value systems.

The literature on heritage fieldwork highlights the importance of community engagement and the integration of sensory and experiential methods, reflecting a broader trend towards participatory approaches that prioritize local knowledge and intangible heritage aspects (Nardi, 2014; Mains, 2014). The pedagogical use of fieldwork as a method for work-integrated learning is also emphasized, showcasing its role in developing practical skills and bridging the gap between academic and professional practice (Calderón, 2021; Gill and Gough, 2023). Additionally, technological advancements are increasingly being integrated into fieldwork, offering new opportunities for data collection and application (Fortenberry, 2020).

Despite these advancements, the exploration of heritage values remains limited, necessitating more comprehensive studies that address the complexities of capturing and preserving these elements (Andrews, 2009). The literature would benefit from a more diverse

range of case studies across different cultural contexts, as well as longitudinal studies that examine the long-term impacts of fieldwork-based approaches. There is a gap in developing methodologies that effectively capture both values and attributes and explore the diverse cultural contexts in which heritage fieldwork is conducted.

A paradigm shift is underway in heritage planning to incorporate citizens' voices in the process, as advocated by the Faro Convention (COE, 2005) and the Historic Urban Landscape recommendation (UNESCO, 2011). Society associates values with existing buildings and cities, which are only partially recognized in heritage listings by urban and heritage planning. Redesign often involves actions such as demolition, maintenance, renovation, and/or the addition of new constructions. These decisions affect how people relate to, use, and associate values with built heritage. Therefore, involving both architects and the community on more equal terms requires alternative methods and tools. Serious gaming during fieldwork could facilitate this, with its immersive capacity to capture valuable information while participants work and socialize in a playful way (Poplin, 2012).

An ethnographic turn in the late 20th century from sitework to fieldwork has been applied in architectural education (Ewing *et al.*, 2011). Although it has become a recurring practice in architectural education, there are limited higher education courses to train architects in fieldwork. Such courses demand an interdisciplinary set of skills, crossing the fields of architecture, anthropology, sociology, and psychology. This skill set is primarily about learning to work in the field, facilitating, and mediating citizen engagement activities and workshops. There is no one-size-fits-all approach, as each case study requires adaptation to the local context. Nevertheless, this paper will reflect upon a range of tested methods that can be adapted and applied to different cases and locations.

This paper explores a values-based approach to redesign through a project-based learning, and particularly, the role of heritage fieldwork in architecture in higher education. Students were asked to define a fieldwork form of investigation, in which they physically observe and interact with a community group to better understand what they valued (attributes) and why (values). The process and findings could then foster a mindset shift in the students' design thinking process, usually biased by attitudes and behaviors shaped by a combination of cultural background, cognition, and experience. The fieldwork method is argued to teach soft skills, making students more sensitive to collaboratively designing cities and buildings.

This paper presents and discusses heritage fieldwork developed in the first phase of the master's graduation studio "Revitalising Heritage: Faro Convention Labs" in spring 2022 at the Faculty of Architecture and the Built Environment, Delft University of Technology. The three sequential phases were: (1) "Cultural Significance Survey," (2) "Values-Based Redesign Models and Applications," and (3) "Heritage Impact Assessment." The fieldwork was undertaken by a group of eight master's students over four weeks in the city of Faro as a locus of research to conceive and/or adapt and apply one game-based approach to any traditional method of citizen engagement. Methods were implemented to map the values associated with buildings and neighborhoods in the city of Faro. The use of such methods in heritage higher education and fieldwork is still in development, and this is where novelty and advancement lie within this design studio framework.

2. Faro convention and the values-based approach

The Faro Convention, adopted by the Council of Europe's Committee of Ministers on October 13, 2005, seeks to broaden the understanding of heritage and its relationship with society. It asserts that cultural heritage is not inherently significant merely because of the existence of objects and sites; rather, its importance stems from the meanings, uses, and values attributed to it by individuals and communities. The convention highlights the crucial role of heritage in promoting human rights and democracy by emphasizing the concepts of "heritage communities" and "democratic participation."

Faro Convention Labs is an initiative designed to promote and implement the principles of the Faro Convention, known as the “Faro way.” It advocates for shared responsibility and innovative approaches to facilitate multi-stakeholder dialog and knowledge exchange, supporting heritage conservation and management. The Labs employ various fieldwork-aligned techniques, including the introduction of good practices, discussion groups, promotional events, heritage walks, and workshop modules (Colomer, 2023).

According to Article 2b of the Council of Europe (2005), a “heritage community” consists of people who value specific aspects of cultural heritage that they wish to sustain and transmit to future generations within the framework of public action. Article 4a further states that “everyone, alone or collectively, has the right to benefit from cultural heritage and to contribute towards its enrichment.” Thus, the right to cultural heritage encompasses not only the ability to benefit from it but also the opportunity to participate in its conservation and management (Zagato, 2015).

While design typically involves creating new structures, redesign focuses on adapting existing ones (Kuipers and de Jonge, 2017). Values-based design pertains to redesigns where decisions are informed by the cultural significance of built heritage. Cultural significance is expressed through values (why it is significant) and attributes (what is significant). This approach ensures that redesign decisions—whether to add, retain, or remove attributes—capitalize on, restore, and enhance associated values rather than destroy them (Pereira Roders, 2007; Andrade and Pereira Roders, 2022).

To facilitate this approach within a design studio fieldwork environment, the Values and Attributes frameworks (Pereira Roders, 2007; Tarrafa Silva and Pereira Roders, 2012, 2021; Veldpaus, 2015) were employed as the theoretical foundation for deconstructing cultural significance. The framework categorizes values into eight primary types: social, economic, political, historic, aesthetic, scientific, age, and ecological values, along with various secondary values. The set of attributes includes both tangible (landscape, area, and asset) and intangible (process, societal and relation) elements. The methodology, results, and discussion sections further elaborate on how the Values and Attributes frameworks were applied in the students’ fieldwork.

3. Studio methodology

The design studio “Revitalising Heritage: Faro Convention Labs” was part of the Faro2027 initiative, which is the city of Faro’s bid for the European Capital of Culture title in 2027. The Faro2027 candidacy aims to contribute to the Sustainable Development Goals (SDGs) outlined in the UN’s Agenda 2030 (2015), with a particular focus on SDG 11, “Sustainable Cities and Communities.” The SDG 11.4 goal addresses the preservation and enhancement of heritage, local knowledge, and the management and quality of the cultural infrastructure network.

The design studio adhered to the principles and criteria of the Faro Convention, fostering collaboration between institutions and communities to develop decision-making capacities. This approach encourages critical reflection on sustainable development processes, ensuring that built heritage contributes to the social, ecological, and economic dynamics in Faro.

The studio was structured into three sequential phases, following the constructive alignment proposed by TU Delft, which includes learning goals, learning activities, and assessment:

- (1) Cultural Significance Survey: This phase involved research for design, focusing on mapping associated values and identifying the buildings, heritage communities, and experts value most (built heritage), as well as determining their limits of acceptable change (LAC).
- (2) Values-Based Redesign Models: In this phase, students engaged in research through design, developing and applying a values-based redesign model for built heritage.

- (3) Heritage Impact Assessment: This phase involved research into design, where students determined and reflected on the impact of the redesign, specifically concerning the identified associated values.

During Phase 1, which included fieldwork, the studio provided a platform for students to achieve the learning goal of mapping cultural significance (values and attributes), a crucial research component to inform design decisions. The studio enabled students to act as young designers, aiming to better inform, control, and improve their design decisions, thereby contributing to the sustainability of buildings and neighborhoods in Faro. Supplementary activities, such as lectures and tutoring sessions on the values and attributes framework, game design, Faro Town Hall’s lectures, and facilitation workshops, complemented the standard course on Research Methodology, titled “Research Plan,” offered by the master’s program.

Students self-organized into three groups: Nature, Policies, and Tourism, reflecting three of the main heritage challenges identified by Faro Town Hall during an informative online lecture. While students within the same theme developed different methods, the Tourism group was an exception, as its members collaborated on a single method. To overcome language barriers, students from TU Delft received additional support in their fieldwork from local students at the University of Algarve.

The serious gaming methods employed included tasks such as treasure hunts, quizzes and puzzles, block-building logic exercises, and card and board games. These were adapted to complement more traditional methods like interviews, questionnaires, informed walks, drawing, and focus groups. This mixed-method approach and the engaged citizens are synthesized and itemized in Table 1. All methods received full ethical approval from the Human Research Ethics Committee of TU Delft.

The serious gaming methods are organized below into three main components: (1) case study, (2) game concept, and (3) citizen engagement. Two photos are included to illustrate the dynamics of the fieldwork and the engagement with citizens.

Table 1. Methods, tools, and target group

Group	Student (citation)	Method	Goal
Policy	Romeijnders (2023)	Policy Text Game (Public: Young people, Adults, Elderly)	Test people’s knowledge about urban parameters and limits of acceptable change, using an online multiple-questions tool
Nature	Szulc (2022)	Minecraft Redesign (Public: Schoolchildren)	Redesign with nature on the Minecraft game, and justify choices using a physical questionnaire
	Elskamp (2023)	Decision-Making Card Game (Public: Schoolchildren, Elderly)	Adapted from “Reigns” role-playing game, Mayor and consultants discuss projects to improve the urban sustainability of Faro
	Tao (2022)	Cultural Mapping Board Game (Public: Adults, Elderly)	Identify, mark, and justify everyday life routes, preferred places, and critiques over a board neighborhood map
	Drijver (2022)	Heritage Walks (Public: Young people)	Photograph and describe greenery or the lack of it on a specific routing, using a mobile app
Tourism	Şahin (2022) Van Herck (2022) Swinkles (2022)	Social Media Card Game (Public: Young people, Adults)	After selecting 100 posts from hashtags related to the city of #Faro, cards were created to reflect about the values and state of conservation of façades

Source(s): Authors’ own work

3.1 Policy text game

The policy text game focused on the São Luís neighborhood, specifically targeting the modernist low-rise housing located on the northeastern side of Faro. São Luís is a key part of the urban developments from the 1950 and 1960s, marking an important era in Faro's history (Agarez, 2016). This area was selected due to concerns about potential identity loss and destruction resulting from uncontrolled renovations (Tarrafa Silva and Valente, 2022).

The game integrated the attributes framework of Veldpaus (2015) with the LAC concept (Turner, 1998; Pereira Roders, 2007). It was developed through a comprehensive policy review at national, municipal, and neighborhood levels. The objective was to gather public opinions on the LAC concerning the attributes and values of modernist housing. A policy analysis matrix was created with six subcategories, where changes were represented on the x-axis (add, keep, remove) and their relation to pre-existence (identity, similarity, difference) on the y-axis.

The game offered a learning journey consisting of seven multiple-choice and open-ended questions administered via Google Forms. As shown in Figure 1, visual aids, including drawings by the student, were incorporated to enhance visualization and understanding of the visual impact of changes. After selecting an answer, participants received instant feedback to provide policy insights and facilitate knowledge acquisition. The responses illuminated the tolerance for change among two groups—residents and specialists—highlighting what they valued and the reasons behind their preferences (Figure 1).

3.2 Minecraft redesign

The Minecraft redesign game, along with the Heritage walks, the Cultural mapping board game, and the Decision-making card game, was part of the “Nature” themed group. Students conducted fieldwork collaboratively, focusing on the Estação neighborhood in Faro. This area was originally home to “Horta da Carreira” one of the city's three private gardens, which underwent significant transformation with the establishment of the train station in 1889, followed by industrialization (e.g. canning, milling factory) and urbanization. Most open and



Figure 1. Left: An example of a multiple-choice question (top) and the answer consisting of an example of a policy (bottom); right: Policy text game engagement. Source: Figure 1 courtesy of Romeijnders (2023)

green spaces were converted into housing, and the railway construction severed the connection with the lagoon (Ria Formosa National Park). The student hypothesized that these changes disrupted the ecological values due to altered attributes.

For the Minecraft redesign exercise, the student explored the role of nature in historic cities in fostering healthier environments. She focused on the interconnection between nature, urban settings, and community well-being, positing that emotional attachment to greenery in historic cities could emerge during a citizen engagement design workshop. She utilized the Minecraft gaming tool for youth co-creation in redesigning a vacant building in Estação, incorporating additional methods to assess environmental and ecological awareness and validate or challenge existing literature (Delaney, 2022; Andrade *et al.*, 2020).

Drawing inspiration from the “Tirolcraft” project (Andrade *et al.*, 2020) and “Block by Block” an initiative by UN-Habitat that uses Minecraft as a citizen engagement tool for designing public spaces in the Global South (Delaney, 2022), she adapted the design games workshop methodology, as shown in Figure 2. This adaptation engaged schoolchildren in envisioning nature-based solutions (NbS) for a building. Initially, children answered questions like “How important is the element in the photo?” and “Why?” regarding a set of nine images depicting nature, vacant buildings, and public spaces. These questions aimed to identify which values and attributes were essential to them. Following this, they participated in the redesign exercise, with the goal of making the building complex greener and assigning it a new function.

3.3 Decision-making card game

This game also focused on the Estação neighborhood, with nature as the central theme. Most residents in this area are elderly, living in self-owned houses built around the 1920s. When these residents move to elderly homes, their houses often remain vacant, contributing to the significant number of empty buildings in the area. Notably, a large plot of the flour mill factory



Figure 2. Left: On example of a semi-structured question; right: Minecraft redesign workshop. Source: Figure 2 courtesy of Szulc (2022)

has been vacant for nearly 2 decades. The student chose to work with this industrial heritage as a critical response to the current €50 million project aimed at transforming the industrial complex into luxury apartments.

The decision-making card game was adapted from “Reigns: The Council,” a negotiation game where a monarch decides which petitions from advisors to support or decline, managing the reign’s four pillars: Faith, People, Military, and Money. Advisors have secret agendas, and the monarch can be deposed if any pillar reaches an extreme positive or negative level. The student adapted this game to engage children and the elderly in reflecting on and deciding over design proposals using a card deck and tabletop setup.

The design proposals included actions such as adding or adapting architectural and urban structures, events, and policies. The student drew inspiration from the NbS catalog of the URBiNAT project (2022) and adapted it to the context of Estação, Faro, to create design proposal cards. As shown in [Figure 3](#), he developed nine cards corresponding to each of the eight value categories of [Pereira Roders \(2007\)](#), resulting in 72 cards that allowed citizens to recognize the full range of values equally.

The game could be played individually using a Yes or No mechanic or in a group with a similar asymmetric structure to the Reigns game (4–6 players). The individual format was aimed at engaging the elderly, while the group role-playing dynamic was designed for schoolchildren. In the group setting, one child acted as the “Mayor” while the others were “Advisors”. Each advisor started with five cards, choosing one as a design proposal to defend. Advisors could comment on others’ proposals, and the mayor had to decide which proposals to accept or decline, justifying their decisions each round. Each accepted proposal impacted the neighborhood positively or negatively on one or more of the four pillars: Nature, People, Town Hall, and Money.



Figure 3. Left: Workshop with schoolchildren; right: Outdoor workshop with Elderly. Source: [Figure 3](#) courtesy of [Elskamp \(2023\)](#)

3.4 Cultural mapping board game

The cultural mapping board game also focused on the Estação neighborhood, with nature as the central theme. The student identified various issues related to urban (re)development, highlighting the coexistence of challenges and opportunities due to the neighborhood's rich interplay with the lagoon and proximity to the historic center. Despite the neighborhood's calm atmosphere, the constant flow of people and goods through the station creates traffic, parking, and logistical challenges.

The student chose cultural mapping as a systematic tool to engage communities in identifying, recording, and analyzing values and attributes. As a mode of inquiry endorsed by United Nations Educational, Scientific and Cultural Organization (UNESCO) (Duxbury *et al.*, 2015), the aim was to capture attributes not easily mapped, such as intangible ones like memories, activities, and meanings. The cultural mapping method was adapted into a board game format. The “city game” technique (Tan, 2014) was used to transform the map of the Estação neighborhood into a game board, with additional mechanics and tools such as post-its, colored pens, and markers.

As shown in Figure 4, the cultural mapping board game was designed to be conducted either as a workshop or through a street interview approach. Initially, participants wrote on sticky notes what they liked and disliked about three aspects: environment, activity, and meaning, and marked these locations on the board. Next, participants responded to a series of yes or no statements, such as “I love Estação” and “I want to stay here” localizing their answers to attributes on the map and providing reasons for their responses until they reached five positive and negative replies. This process aimed to correlate tangible and intangible attributes with levels of place attachment.

3.5 Heritage walks

The heritage walks method also focused on the Estação neighborhood, with nature as the central theme. The construction of the train station created a barrier between the area and the Ria Formosa National Park waterfront. Subsequently, the urbanization process, initiated by the

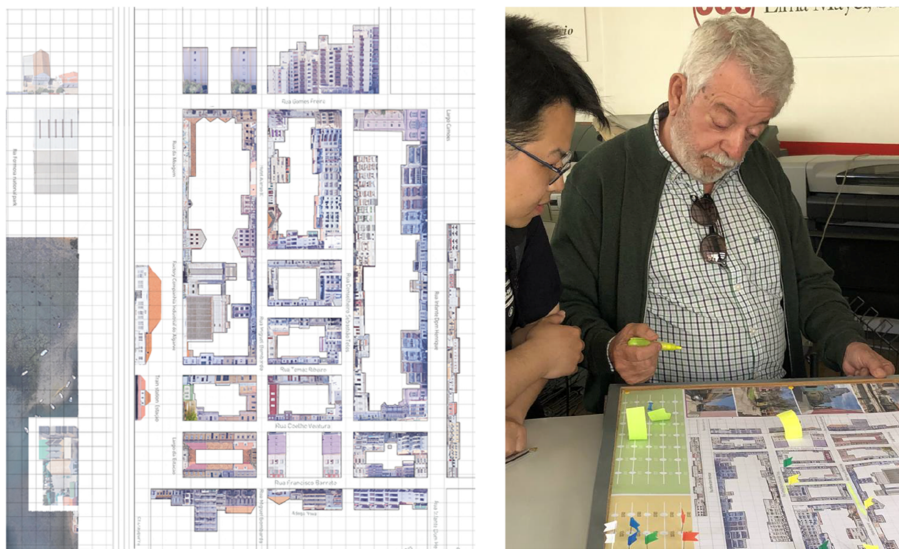


Figure 4. Left: cultural mapping board; right: Engagement with Elderly. Source: Figure 4 courtesy of Tao (2022)

establishment of the milling factory in the 1920s, was planned for the inner part of the territory. This disconnection has resulted in only a few crossing points over the railway track. The student was particularly interested in working with the vacant warehouses between the railway and the lagoon waterfront.

She developed a heritage walking photographic route using a mobile app to explore young people's emotional attachment to nature in the neighborhood. The route was framed as a treasure hunt game, where participants "hunted" greenery, both purposefully planted and spontaneously growing, as well as capturing the absence of green. This heritage route aimed to identify the relationship between emotional attachment and natural attributes in the area. She designed a fixed tour of approximately 45 min (Figure 5) through Estação, crossing the railway and ending at the warehouses and lagoon waterfront. Using the app Wikiloc, participants took photos of natural elements to which they felt emotionally connected, based on their memories, and wrote descriptions to justify their reasons.

The student targeted younger adults to encourage them to explore their neighborhood and foster agency through their own photographs and opinions, as shown in Figure 5. Before starting the route, she provided an explanation about the possible connections of the five senses with nature. This was intended to raise awareness of how nature can be perceived, potentially broadening the scope of the photographs. Photos and descriptions were collected via the mobile app group, along with the exact coordinates of each image. Thus, both values and attributes were analyzed through the descriptions and photos, respectively.

3.6 Social media card game

Students argued that the ever-increasing tourism in Faro and the Algarve introduces a new floating population with different sets of values, such as increased pressure on the housing market and varying tolerance for changes to historic buildings. They chose to focus on the São Francisco neighborhood, which is part of an Urban Rehabilitation Area, a master plan strategy aimed at rehabilitating buildings, infrastructures, and equipment that are insufficient, degraded, or obsolete.

The game was named "O Jogo de Palavras" (The Word Game) to reference the relationship between hashtags and image descriptions on Instagram. Students collected 100 social media posts from January 2021 to April 2022, using popular hashtags in Portuguese and English: #tourismodefaro, #faroalgarve, #faroportugal, and #visitfaro, #farocity, #farooldtown,

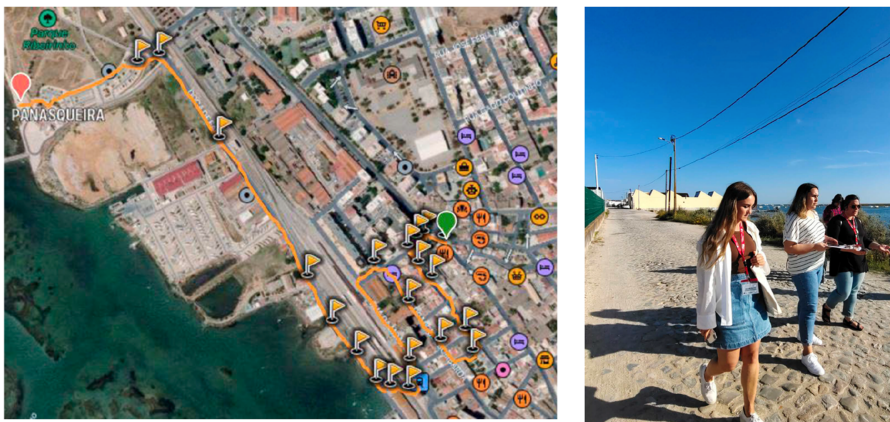


Figure 5. Left: Heritage walks routing; right: The route between the station and the lagoon. Source: Figure 5 courtesy of [Drijver \(2022\)](#)

#faroportugalpt, #farotourism. The posts were then manually organized (texts and images) and classified by group (locals and tourists), location, caption, hashtags, and season.

The game was designed by dissociating hashtags from their correlated images. The most frequently used hashtags and images were printed to form two decks of cards. As shown in Figure 6, participants were tasked with connecting at least two hashtags with one image, focusing on façade attributes. Each hashtag was coded and linked to one or multiple values. After gameplay, the results were also coded and translated into values. This mechanism served to question and validate social media opinions with both locals and tourists.

4. Results

The results of the serious gaming implementations are organized into four main areas: (1) citizen engagement, (2) values, (3) attributes, and (4) design. While the primary focus is not on detailing how the cultural significance survey was applied to the redesign exercise, a brief paragraph is included to provide some context. In some instances, values and attributes are intertwined to enhance the clarity of the analysis, which may alter the aforementioned structure.

4.1 Policy text game

The student conducted two rounds of citizen engagement at the Faro Municipal Market and its surrounding area, the busiest location near São Luís. Nine specialists (municipal staff and academic experts) and 26 residents participated. A frequency analysis was performed to determine how often values and attributes were mentioned by each group.

Regarding attributes, the community prioritized urban attributes such as context/setting, ensemble, and area, while specialists focused on smaller-scale attributes like building and urban elements. This suggests that the community considers small changes more acceptable than specialists do, indicating a disagreement on whether minor changes affect the modernist character of the area.

In terms of values, the community placed greater importance on social and scientific values, while assigning comparatively less importance to aesthetic, economic, and political values. Conversely, specialists emphasized social, aesthetic, scientific, and age values, with less association to economic and political values. Aesthetic values were a point of disagreement, reinforcing and validating the attribute results, which correlate smaller-scale attributes with modernist aesthetics.



Figure 6. Left: O jogo da palavra engagement; right: Some gaming images over a map. Source: Figure 6 courtesy of Swinkles (2022)

For the LAC, the community showed a greater inclination to add or keep “difference” and “similarity” in relation to pre-existing conditions, while specialists prioritized adding or keeping “identity” and “similarity.” This trend aligns with the findings on values and attributes. Moreover, compared to policies, which mostly advocate for “keeping” as a conservationist stance, both stakeholder groups generally agreed and showed more openness to “adding,” indicating a more interventionist position.

After investigating the cultural significance of São Luís, a two-story building designed by architect Jorge de Oliveira in the 1950s (Agarez, 2016), located at Rua de Emiliano da Costa, was selected for the values-based design exercise. On-site drawings, photos, and videos were produced to conduct a damage assessment and climate analysis. The student drew inspiration from a house where six lifeguards and an elderly lady shared the space, albeit on different floors. However, instead of designing a specific program for them, the student developed citizen-led design scenarios based on the policy text game analysis. She explored three values-based design models—identity, similarity, and difference—applying different combinations of values, attributes, and LAC in each.

4.2 *Minecraft redesign*

The student engaged with children due to their underrepresentation in urban planning participatory processes, where their perceptions and ideas are often underestimated (Cooke and Kothari, 2001). Additionally, there is limited research on the pros and cons of youth agency and what architects can learn from them (Kraftl, 2013; Patsarika, 2014). The student argued that children can think beyond just playgrounds and decided to give them a voice in her redesign process. A workshop was organized at the middle school “Escola Básica Dr José Neves Júnior,” near the Estação neighborhood.

The building at Rua Infante D. Henrique 76 in Estação, designed by Jorge Oliveira around 1950 for the urban public transport company Empresa de Viação Algarve, was selected for the redesign exercise. Historical drawings from the Faro Town Hall’s archive, along with local literature (Agarez, 2016), on-site photos, and books, supported the research contextualization and game modeling.

A group of 22 children, aged 14, was divided into two groups. Due to the school’s availability, the workshop was limited to 90 min, structured into two 45-minute sessions. This allowed one group to play the Decision-making card game (explained below) and the other to engage with the Minecraft game. The children self-organized around four laptops with the Minecraft model of Faro. The time constraint led to a few incomplete questionnaires and unfinished designs, but the collected data was sufficient to identify values and attributes.

The student observed that the children were dedicated to developing appealing designs and enjoyed their time in the workshop. Texts were coded to map primary and secondary value types, while attributes were coded from another set of texts used by the children to justify their design decisions. These were validated according to the children’s redesign choices, i.e. what they added, adapted, and removed.

The highest-rated values were ecological and social, with natural elements being the most highly rated attributes, often used for socialization, such as transforming the patio into a public space with a community garden and public pool. This overlap reinforces the mapped values. The student noted that the children’s preference for such values might indicate their emotional attachment to nature or at least their need to access the natural environment as a catalyst for socialization. She explored three values-based design models—identity, similarity, and difference (Turner, 1998)—applying different combinations of values and attributes in each for a Youth Center.

4.3 *Decision-making card game*

A total of 22 school children participated in the card game workshop, along with 18 additional participants from street engagement and an elderly home. The student observed and recorded

the workshops, noting people's interactions and discussions to better understand what they valued and why, based on their design choices, negotiations, and trade-offs.

For the children, ecological values were rated highest, while social values were most important for the elderly. Both groups also associated economic values as a secondary consideration. The elderly shared stories highlighting the importance of social interactions and the lack of spaces and opportunities to connect with younger people. Children emphasized the importance of natural attributes, such as parks and the lagoon, as places where they can interact with nature and socialize.

Building on the cultural significance survey results, the student proposed a symbiotic design postulate centered on intergenerational interactions and cohabitation with nature. He argued that this approach could address several community needs. Functions were assigned in alignment with the most-rated values, including a communal garden, community center, connecting passage, rooftop restaurant, workshop hall, and rooftop club.

4.4 Cultural mapping board game

The student found it challenging to engage the elderly population in Estação, primarily because they have established routines, activities, and concerns. However, the language barrier was overcome with the help of local university volunteers. He adapted the workshop format to a street-based itinerant interview, engaging with 42 residents (27 elderly, 12 adults, and 3 teenagers) at offices, services, cafes, and bars. He noted that approaching people in a less formal manner made them more open to sharing their opinions and memories.

The highest-ranked value was social, followed closely by ecological, aesthetic, and economic values. The student discovered that people generally feel more attracted to the edge areas of the neighborhood. For instance, at the southern edge, people value non-natural attributes such as the beauty of the buildings or their functional offerings. Natural assets were primarily appreciated at the neighborhood's western edge by the sea.

A significant percentage of people (90%) responded positively to "I love Estação," and 81% expressed a strong identification with the neighborhood, appreciating its charms and quietness. However, adults felt there were insufficient activities, making it less appealing for younger residents. The elderly emphasized important memories related to activities and social networks with family and friends in and around buildings like cafes and bars. Respondents from both age groups highlighted the aesthetic and use values of the buildings as important to them.

The student chose to focus on the northern part of the milling factory as a case study. As highlighted in the "Decision-Making Card Game," there has been a decade-long debate about a new project to build a luxury apartment complex over the industrial heritage site. To conserve the associated values identified in his survey, as well as the legibility and place attachment, he proposed a values-based redesign model. This model aims to provide more social activities for residents without disrupting the quiet atmosphere. He also assessed the redesign's impact on place attachment, as defined by residents, balancing social (interactions), ecological (presence of nature), and economic (use) values.

4.5 Heritage walks

Two groups of young adults, each consisting of six participants—one local and one non-local—were engaged in heritage walks. Communication was relatively easy as participants were open and willing to speak in English. Given that Estação primarily has an elderly population, the student found it challenging to recruit adults for the walking exercise. Participants were asked to take a minimum of 20 photos each to enrich the dataset. Although they walked together, each participant took their own photos and provided individual descriptions.

The highest-ranked values, in descending order, were ecological, aesthetic, economic, and social. Ecological values topped the list, likely due to the route's focus on "hunting" natural

elements. An emotional cloud was created to visualize the positive and negative values of the route, based on participants' descriptions of the presence or absence of nature. The negative valuations were relatively higher than the positive ones, indicating dissatisfaction with the current state of the area. Spiritual and emotional subcategories of social values suggested that the area felt unsafe and deserted. Other remarks included the lack of accessibility (use and non-use economic values) and inadequate greenery maintenance (essential ecological values).

Areas with a higher concentration of natural attributes, particularly by the waterfront, were considered places where people had a greater emotional attachment (spiritual and emotional social values). The student noted that some participants appreciated details such as flowers growing in the cracks of bricks and plants on balconies. They were also intrigued by the potential to explore nature near vacant warehouses, seeing it as an opportunity to be close to the lagoon and enjoy wider viewpoints.

Based on the cultural significance survey, values-based redesign models were proposed to create a green corridor and increase social spaces, promoting ecological and social values, which were among the highest-ranked. The student chose to redesign three vacant buildings in Estação, previously used as fishing warehouses, located at Estrada do Passeio Ribeirinho 38, 40, and 42. In the redesign, two buildings were converted into a working space (offices and studios) and a community leisure space (restaurant, café, Stand-Up Paddle [SUP] center, bird watching, and exhibition). She also considered the landscape of Ria Formosa Natural Park, including tidal flats, salt marshes, hoods, and sand dunes, as well as the associated flora and fauna.

4.6 Social media card game

Students engaged with 45 tourists and 45 locals by setting up three gaming sessions in cafes and bars across São Francisco. Each gameplay session took an average of 10 min. The students focused on building façades after identifying numerous vacant buildings and changes that impacted the streetscape and neighborhood's image. They followed the academic argument that façades are crucial in historic cities for representing national identity in tourism through brochures, social media, and postcards (Hossein Askari *et al.*, 2014).

The game aimed to reveal the values associated with different attributes of building façades (the main attribute) in the neighborhood. The most frequently mentioned attributes were building, street, door, Portuguese tiles, greenery, window, and street art. Common words associated with values included pride, memories, expensive, cheap, affordable, legal, illegal, typical, authentic, beautiful, ugly, classic, innovative, aged, modern, and healthy. Both locals and tourists agreed on the low aesthetic values assigned to contemporary high-rise buildings. Tourists appreciated graffiti as a modern element, while locals considered it illegal and unpleasant. All Portuguese tiles were highly regarded by locals, but tourists valued only the blue patterned ones.

The insights gained from the values of façades from both tourists and locals guided the students in selecting their case studies. The critical areas identified for potential redesign consisted of vacant historic buildings that were degraded and in a low state of conservation, perceived as aged and ugly in the card game dynamics. All three students aimed to achieve affordable housing with their redesigns. One student chose to restore a ruin in partial disrepair, another focused on a historic building in a mischaracterized streetscape, and the third addressed a building under pressure from an ongoing redevelopment project, slated for demolition and replacement with high-rise apartments.

5. Discussion

This section is organized into four statements that critically reflect on the fieldwork experience. These statements are inspired by *in situ* observations, design studio discussions, and student workshops. Further exploration, clarification, and provocation are needed and should be documented.

5.1 *The changing dynamics of the fieldwork impacted method optimization*

Several changes and adaptations were necessary. Initially, fieldwork was planned for two months, but funding was available for only one month. Engaging citizens proved challenging, as there is no strong tradition of self-organization and gathering in Faro for architecture and urban planning matters. Partners leveraged their networks with schools and an elderly association. Young people and young adults were engaged through the University of Algarve, but since many are not from Faro, local engagement was lower than expected.

Students arrived in Faro with their Research Plans ready to implement. However, due to changes in dates and time constraints, workshops had to be restructured, which somewhat compromised the expected results. For example, workshops originally planned for three hours had to be condensed into half the time. These changes affected the richness of the datasets and, consequently, the collected data and reflections. A smaller set of methods and greater cooperation among students, as demonstrated by the three students focused on tourism, might have been more beneficial. However, there is always a risk of unequal contributions among students.

5.2 *A fieldwork theme influences the cultural significance survey*

Identifying all categories of values and attributes is neither mandatory nor expected. The Values and Attributes frameworks provide a comparative basis for analysis. Depending on the sources, they often reveal a combination and hierarchy of values and attributes, such as the historic and aesthetic values associated with the façades in the São Francisco neighborhood. The Policy group, focusing on urban parameters and heritage policies, ended up emphasizing tangible attributes over intangible ones. This is a research result in itself, highlighting that policies in Faro and Portugal focus more on tangible attributes, leaving a critical gap in addressing intangible attributes, as recommended by international documents like the Faro Convention and the UNESCO Recommendation on the Historic Urban Landscape (2011).

The Nature group aimed to further understand the role of nature in place attachment across different age groups. Consequently, ecological values and intangible attributes such as social and process were more prominent, as expected. A question arose about how the chosen theme influenced participants' responses or introduced research bias, which was widely discussed but remained unanswered. Further research, in collaboration with fields like anthropology, psychology, and sociology, could enhance understanding and accuracy.

5.3 *How (serious) serious gaming should be to engage different societal groups in fieldwork*

Students' passions, interests and challenges were considered when encouraging them to adapt traditional methods into gamified versions. The group of students expressed interest in working with children, photography, board games, card games, and policy. When language seemed to be a barrier, serious gaming served as a medium, a universal language. It facilitated co-creation in redesigning with different generations. Each age and societal group has specific needs, motivations, and cognitive approaches to engagement in such workshops. A Minecraft game may not be suitable for the elderly, just as gamifying oral memory is not recommended for children.

This was the first time students worked with serious gaming and engaged people in their design processes—a double challenge they overcame with a clear structure and a supportive team and network. Overall, students shared in their final presentations how valuable and inspiring the fieldwork was, highlighting both the challenge of adapting methods and the enjoyment of the engagement process. Improvements could include decision-making cards on the current state of the milling factory to compare existing situations with desired scenarios, and additional mechanics to capture opinions about interiors in the social media card game.

5.4 Future architects become more empathetic and citizens more trusting through fieldwork

Students reported that both “sides” learned from the participatory approach. Citizens gained knowledge about the values of built and ecological environments and were motivated to share their opinions, potentially influencing the students’ redesign projects. Students, in turn, gained experience in facilitating engagement workshops and appreciated the meaningful and creative input from citizens. This experience helps future architects learn to address people’s needs more effectively.

Most students experienced cultural learning outcomes. Initially, they felt uneasy about possibly taking people’s time from their daily lives and duties. However, they were uplifted by the positive feedback from participants, who enjoyed the experience and were motivated by the student team’s presence. This initiative provided citizens with topics to discuss and engage with each other during interactions in cafes and bars. For instance, they were already concerned about ecological issues and reassured the team that these need improvement in the city. Students were impressed by the Portuguese spontaneity, socialization, and interconnectedness.

6. Conclusion

This paper confirms the importance of incorporating fieldwork into the design process of master’s graduation studios in architecture. Although new to the master’s students, serious gaming proved effective in facilitating citizen participation and helping students become more familiar with values-based approaches. Local partners in the Municipality of Faro, as well as other cities, can utilize the results of the students’ work and this research to better understand the values associated with their cities and buildings. This process will enhance participatory urban and heritage planning and lead to a greater acknowledgment of these values.

The insights gained from the findings can inform decision-making processes and promote more inclusive and holistic approaches to heritage conservation and sustainability. The students’ work demonstrated that bottom-up participation can lead to better choices for values-based design, although such methodologies remain understudied. Students may now be more inclined to shift from an ego-centric design perspective (self-knowledge at the center of the process) to an eco-centric one (social and environmental knowledge at the center of the process).

The Municipality of Faro supported the fieldwork as part of the Faro2027 initiative, emphasizing the significance of the Faro Convention for Portuguese cities and communities. This design studio aimed to place people and values at the heart of cultural heritage planning and management, highlighting the potential of cultural heritage as a source of sustainable development and well-being. Despite the challenges of engaging societal groups in Faro, this work supports the creation of a culture of participation and self-organization, directly contributing to one of the main principles of the Faro Convention—heritage community. Despite many limitations, this fieldwork laid the groundwork for future research and education, as well as policy change in the city of Faro. Thus, Faro is now, hopefully, one step further along this path.

Beyond its contributions to higher education and policy-making, this heritage fieldwork study offers significant potential to enrich the broader heritage field by fostering interdisciplinary collaboration and encouraging innovative methodologies that can be adapted to various cultural contexts. This approach not only enhances the understanding and preservation of cultural heritage but also strengthens the connections between communities and their heritage, promoting a more dynamic and inclusive heritage practice.

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