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ARTEFACTS FOR CHANGE: INTEGRATING ECO-SOCIAL JUSTICE INTO DESIGN EDUCATION.

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GAME-BASED LEARNING (GBL), BOARD GAME, COGNITIVE DEVELOPMENT**

ABSTRACT | The urgent issues of climate action and social justice are intertwined, demanding immediate attention, particularly within higher education. Educators underscore the imperative to incorporate climate change into the curriculum, emphasising the integration of eco-social justice (ESJ) within educational frameworks. Building upon critiques of emphasis on making-oriented aspects in traditional design education, scholars highlight the disproportionate focus on crafting often overshadowing broader ecological and societal contexts.

Stemming from my experience in product design and university teaching, this doctoral research explores the potential of design education and physical interventions in addressing the climate crisis and social justice. The research is currently in its early experimentation phases, and this paper outlines the ongoing progress and achievements.

My research revolves around embedding eco-social justice into curriculum content through “object-based learning (OBL)”, advocating for student engagement with artefacts in learning and teaching. The overarching aim is to investigate how OBL artefacts can serve as communicative tools, conveying knowledge of eco-social justice within design education. The research question, “How might we design and embed artefacts in design education to convey eco-social justice in higher education learning and teaching?”, leads to sub-questions exploring current practices of OBL, the typologies of artefacts, and the understanding of eco-social justice within higher education curriculum. The methodology conducts a practice-based research framework, incorporating qualitative research, research through design, and document analysis, utilizing a triangulation approach. The case studies are currently collaborating with the BA and MA Design Management programs at a creative arts university in London, UK, spanning over two academic years. Within this research context, the artefacts indicate (re)designing and creating ‘drinking vessels’ for Design Management curriculums.

The contribution of this research extends beyond enriching our understanding of object-based learning, design practices, and eco-social justice. It aims to explore OBL and its potential to enrich student learning and teaching about eco-social justice by emphasizing the design of artefacts. It contributes to narrowing the divide between general commitments to Education for Sustainable Development and day-to-day learning and teaching activities, thereby contributing to the transformation of design education toward a more sustainable future.



1. Introduction

In an era marked by escalating environmental challenges and the pressing need for social justice, the role of design education stands at the forefront of reshaping eco-societal perspectives. As emphasized by Meyer and Norman (2020, p. 16), addressing global challenges is imperative, including those outlined in the United Nations' Sustainable Development Goals, such as inequality, climate change, justice and so on. Papanek (2019) underscored that design schools focus excessively on design skills and neglect aspects of the ecological, social, economic, and political environment. Coinciding with Meyer and Norman (2020, p. 22), traditional design education tends to lean towards “creating great craft”, and although making-oriented has served a purpose, it falls short of meeting today’s needs. This research responds to the growing need for a shift in design pedagogy by addressing the identified gap and exploring the potential of object-based learning (OBL), as a pedagogical approach to convey eco-social justice principles.

The subject area of this research encompasses design practices and learning and teaching (L&T) within the context of eco-social justice (ESJ) in this research. The following diagram illuminates the relationship between these subject areas and the research aims. The overall aim is to demonstrate how designed artefacts for L&T sessions can communicate the knowledge of ESJ through curriculum delivery in design education. This research contends that the prevailing framework of design education predominantly emphasizes materialistic aspects in design practices when teaching sustainability to higher education students. In contrast, this research seeks to address the gap by exploring object-based learning (OBL), a pedagogical approach, to centralize eco-social justice within the domain of design education in Higher Education Institutions (HEIs).

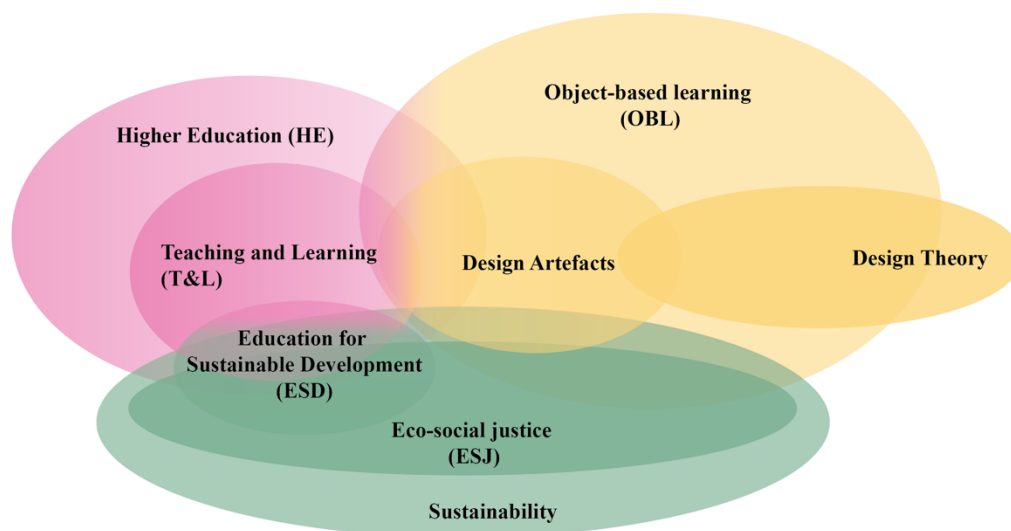


Figure 1. General Subject Area.

The primary aim transforms into the main research question: “How might we design and embed artefacts in design education to convey eco-social justice in higher education learning and teaching?”. This research question unfolds into five sub-questions:

1.1 What is the current practice and scholarship from OBL and related pedagogy, and in what potential ways this can be integrated with (product) design knowledge and practice?

1.2 How might artefacts be used to generate students’ ESJ awareness and understanding in teaching and learning sessions?

1.3 What characteristics or typologies of artefacts are designed for in-classroom learning, and in what theory could be built for designing from design curriculums?

1.4 What are current articulations and understandings of ESJ, particularly in HE curricula, and how can ESJ be understood for purposes of T&L in a particular case context?

1.5 What typologies of artefacts are designed for eco-social justice in higher education teaching and learning?

Each of these sub-research questions has its own set of objectives contributing to the research: Starting with 1.1, the objective is to investigate the current utilization of OBL in integrating with (product) design knowledge and practice required for HE. This investigation will primarily rely on literature reviews to discern existing practices and scholarly perspectives in this intersection. Moving on to 1.2, the objective is to understand how the integrated knowledge gained from OBL can be practically applied in experimental settings, specifically through the utilization of designed artefacts. This incorporates a literature review, 'research through design' and qualitative methods with experimentation and iteration within case studies. In sub-RQ 1.3, the focus lies on evaluating the typologies and characteristics of artefacts within OBL environments, their impact on learning and teaching, and the methods of designing them. This investigation will employ research through design and iterative practice to assess the artefact typologies. Sub-RQ1.4 captures the current understanding of eco-social justice within higher education through document analysis, allowing for comprehending ESJ for teaching and learning. In 1.5, the objective is to comprehend the typologies of artefacts designed for eco-social justice teaching and learning in HE.

The research adopts designer's perspective rather than that of a teacher, focusing on resolving design problems instead of pedagogical issues. In this context, as the designer-researcher, I position myself in the role of a designer instead of assuming the perspective of a teaching staff. This approach ensures the exploration of design artefacts for teaching and learning while delivering ESJ knowledge.

This research aspires to make contributions to three subject areas: object-based learning (OBL), design practice, and eco-social justice (ESJ). The logical relationships among these components are visually represented in Figure 2.

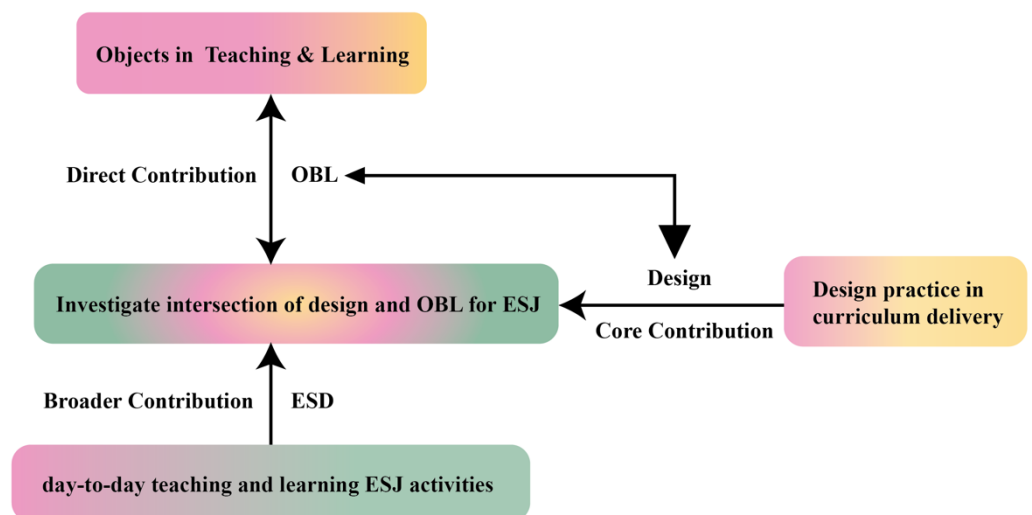


Figure 2. Framework of Contributions to Knowledge.

The direct contribution of this research centres on generating new design insights for object-based learning, particularly in how objects are designed to communicate knowledge in teaching and learning contexts. Emphasizing the incorporation of design practice (artefacts) into curriculum delivery, the research reveals typologies and characteristics that convey information about eco-social justice within

educational settings. The long-term impact extends to the domain of Education for Sustainable Development (ESD). It is crucial to emphasize that the research does not aspire to revolutionize every aspect of ESD. Instead, the ambition is to bridge the gap between general ESD commitments and the day-to-day learning and teaching activities of educators by utilizing design practices.

2. Context

The term “object-based learning (OBL)” refers to a student-centred pedagogy (Cain, 2011), that provides students with opportunities for active engagement with artefacts or objects in immersive and multisensory learning experiences (Chatterjee & Hannan, 2016). Artefacts as a central information source for students engaging in object-based learning, necessitating observation, analysis, and interpretation (Reiley & DeLong, 2023, p. 57). The term “artefact”, originating from anthropology/archaeology, refers to a man-made object (Stappers & Giaccardi, 2014). In this research context, “artefacts” are defined as three-dimensional tangible objects, extending beyond traditional specimens (Cobley, 2022), and artwork, to encompass everyday items and designed practices.

Hardie (2015, p. 23) notes that physical objects play a pivotal role in facilitating the exploration of “design, culture, and society” within teaching and learning contexts, also serving as a “host” for interdisciplinary viewpoints. The significance of objects is highlighted in transferring “subject-specific and cross-disciplinary” (Chatterjee & Hannan, 2016) knowledge. Schultz (2018) asserts that students’ learning is enhanced through interaction with artefacts, a perspective endorsed by Hardie (2015).

Within the scope of this research, eco-social justice (ESJ) serves as the contextual content for integrating object-based learning into design education within the creative arts university. ESJ, constitutes the foundational precept of sustainable development, emphasizing the interconnection between ecological and social systems (Jaffe & Gertler, 2008). Wang and Altanbulag (2022) underscore that ESJ prioritizes the interdependence between nature and society. Specifically, Attfield (2021) advocates for ESJ, acknowledging the realm of racial justice, colonialism, and capitalism in creating social divides and environmental disasters.

The implementation of OBL is posited as a pedagogical strategy, that not only navigates the complexities of climate action and social justice but also situates learners at the centre of the educational experience, fostering active engagement and a holistic understanding of eco-social justice issues.

3. Research Method and Approach

This doctoral research is grounded in a practice-based research framework, guided by the principle that “creative artefact is the basis of the contribution to knowledge” (Candy, 2006, p. 3). Various methodological approaches have been employed in this research, including literature review, qualitative research, research through design, and document analysis. These methods are utilized in a triangulation approach (Gray & Malins, 2004) to analyze complex issues. A non-chronological diagram (Figure 3) has been introduced to visually elaborate on the intricate relations and structure of these approaches and methods.

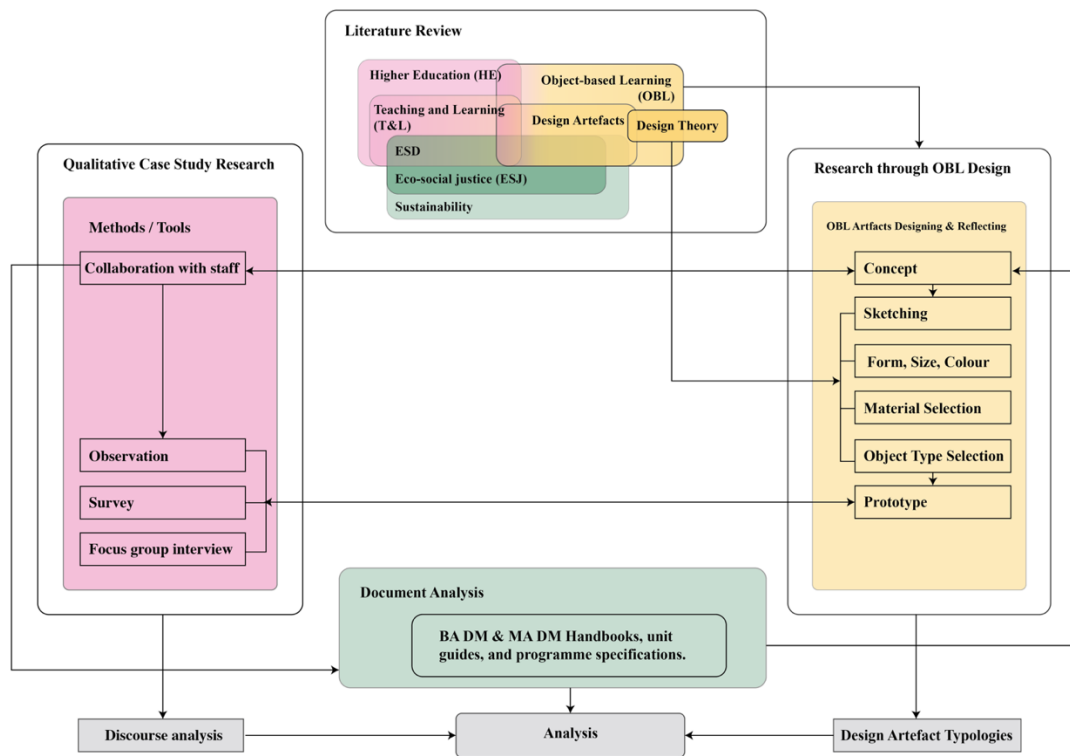


Figure 3. Research Approach and Methods.

3.1 Qualitative Inquiry

This study employs qualitative research, as defined by Leedy and Ormrod (2019, p. 418), encompasses the exploration of information that “cannot be easily reduced to numbers”. In this approach, the researcher assumes a pivotal role as the primary instrument, actively engaging in the collection of data “through examining documents, observing behaviour or interviewing participants” (Creswell, 2018, p. 164). This multi-sourced approach surpasses reliance on a single data stream, providing a richer dataset. The data in this research comes from the researcher's first-hand observations, interviews with students and teaching staff, surveys, and analysis of documents. While there might be instances where data emanates from surveys, the predominant focus will be on questions that do not lend themselves to numerical categorization.

Research through design stands as one of the primary research approaches applied in this research. Research through design not only draws upon established theories but also generates new knowledge through design practice (Gaver, 2012). As articulated by Downton (2003), the process of research through designing involves applying practical knowledge to attain tangible outcomes, thereby revealing the inherent knowledge embedded in their creation. The significance of artefacts in research through design is underscored by Stappers and Giaccardi (2014), who emphasize the important role that objects crafted by designers play in the research through design process. Within the context of this research, the generation of new knowledge occurs through the process of designing artefacts specifically tailored for authentic learning and teaching environments. In essence, the research through design employed in this study contributes to the application of knowledge in the domain of OBL artefacts within educational settings.

3.2 Research Strategy and Research Structure

In the exploration of qualitative designs and research strategies, this study incorporates two research strategies - ‘case study’ and ‘document analysis’. The utilization of both case study and document analysis strategically contributes to the depth and breadth of insights sought in this inquiry.

A case study, also referred to as “idiographic research” (Leedy & Ormrod, 2019), involves in-depth studies of a particular individual, program, or event for a defined period. This research adopts the case study, defined by Yin (2014) and is characterized by its empirical inquiry into real-life contexts (Creswell & Poth, 2016; Yin, 2009). This research collaborates with Bachelor of Arts (BA) and Master of Arts (MA) Design Management (DM) programs at a London-based creative arts university over two academic years, spanning two academic years from 2023 to 2025. The objectives of case studies are to (re)design and evaluate a series of tangible artefacts aligned with the existing curriculum and learning outcomes for DM programs.

DM, as a cross-disciplinary field, adopts a non-traditional design education approach by avoiding centralization of the making process. Meanwhile, the DM programs have graciously supported and provided me access to their classrooms and their teaching materials (such as handbooks, unit guides and reading lists) for this research. It makes those two DM programs an ideal environment for OBL practices, especially testing of OBL artefacts and evaluating the impact these artefacts have on student learning experiences.

Document analysis is one of the strategies in this research, which investigates the inherent meanings present in text, images, and spoken languages (O’Connor, 2019). This analytical method applies various textual analytical techniques to study texts “as sources or objects of study” (Karppinen & Moe, 2012, p. 189). Within the BA and MA Design Management case studies, document analysis is applied to comprehend existing course curricula by analyzing course materials such as course handbooks and unit guides. The focus will be on scrutinizing sections or parts of the course handbook that are pertinent to eco-social justice in DM courses.

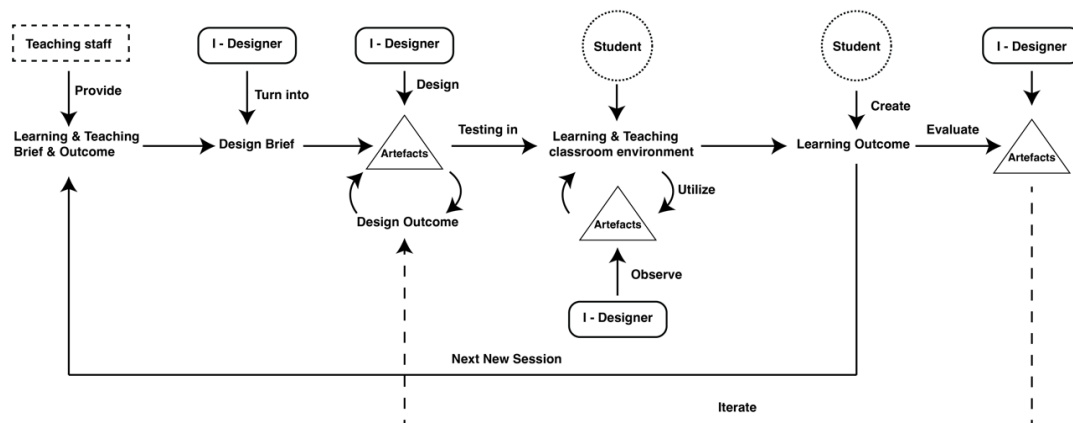


Figure 4. Research Structure.

The ‘research structure’ in my research refers to a systematic chain (see Figure 4) that guides the progression of the research, delineating key phases and activities undertaken. My position in the research as a designer-researcher converting extant Design Management learning and teaching briefs into design briefs. This involves (re)designing a series of OBL artefacts infused with ESJ information, introduced into the classroom for student interaction. Analysis grounded in students’ learning outcomes, gauges the incorporation of ESJ information, and iterative refinement relies on student feedback from questionnaires and focus group interviews. This systematic approach ensures the integration of OBL artefacts into ESJ education within the case studies.

4. Proposed Design Intervention

This research aspires to (re)design a series of ‘drinking vessels’, chosen as the primary type of designed artefact. In this research, the term ‘vessel’ extends beyond its conventional definition as a container

facilitating liquid consumption, encompassing broader conceptualizations as described by Sharpe (2022) in her keynote ‘What Could a Vessel Be?’. Emphasis is placed on integrating design practices and OBL with conveying ESJ knowledge within the Design Management curriculum.

The rationale behind selecting drinking vessels is grounded in the following key considerations. The direct reason arises from the universal nature of “drinking vessel” and its immediate recognition as a sustainability concern. The prevalent awareness surrounding issues like disposable, plastic, and reusable cups make them an accessible and pertinent subject for intervention. Simultaneously, this reason intertwines with the historical and cultural connection between humans and vessels. Dating back to the earliest civilizations, using vessels for liquid consumption has been a fundamental practice.

The realistic reason emerges from my observations during over 15 hours of shadowing and sketching in Design Management courses. Analyzing objects present in the classroom (refer to Figure 5), a pattern emerged, with water bottles, cans, plastic bottles, and coffee cups being common items categorized as “drinking vessel”. Recognizing these objects as ubiquitous in the DM learning environment, the study acknowledges that conveying knowledge related to ESJ can commence through the familiar entry point of “drinking vessel”.

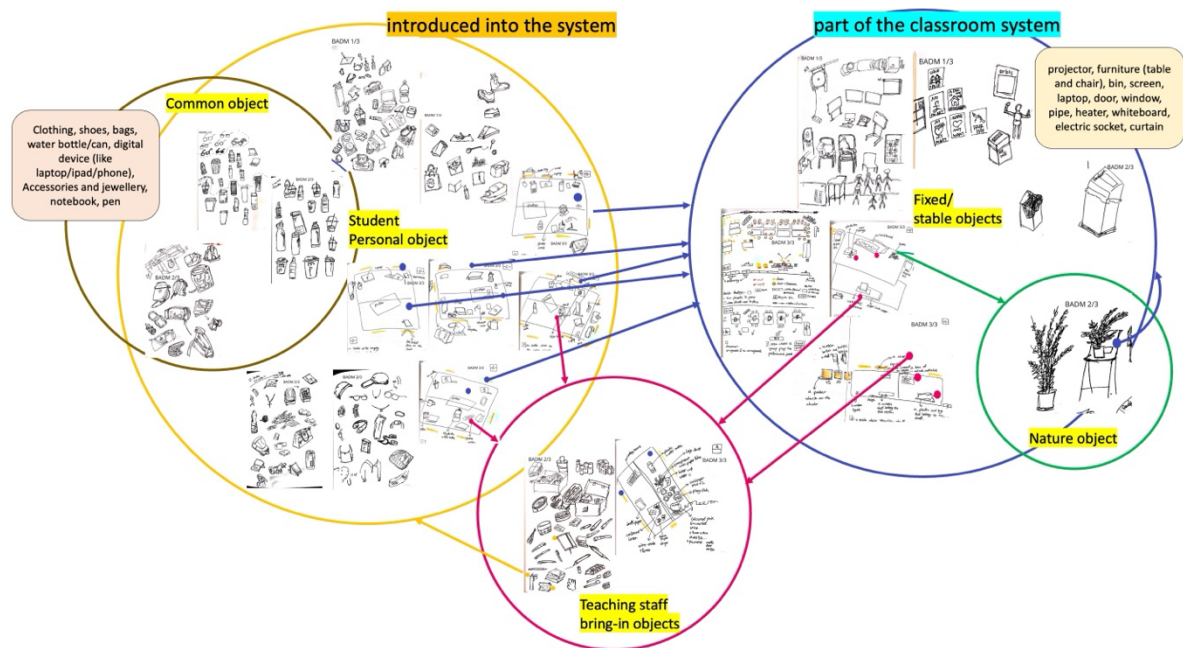


Figure 5. Mapping of object sketches in DM classroom.

5. Conclusion and Future Development

This research, currently in its early phases of experimentation, has sought to address the imperative need for a paradigm shift in design education toward an emphasis on eco-social justice (ESJ), through the integration of object-based learning (OBL) artefacts. Collaborating with Design Management courses has provided valuable insights into the potential of incorporating ESJ within the curriculum.

As this research progresses, ongoing iterations of drinking vessels within the context of eco-social justice in Design Management courses will continue. The emphasis remains on evaluating student learning outcomes, refining the artefacts based on feedback, and ensuring the integration of ESJ knowledge into the curriculum.

Future research could extend to broader subjects, emphasizing the transferability of OBL artefacts and exploring their application in diverse educational settings. This continual journey of research holds the promise of further enriching our understanding of OBL as a pedagogical approach to fostering eco-social justice.

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Lezhi (Crystal) Zhang is a PhD student at the London College of Communication, University of the Arts London, with a background in industrial design. Her doctoral research explores embedding artefacts into curriculum design in design education towards eco-social justice.

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