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# Collaborative Futures: a pedagogical model for delivering future-focused and citizen-centred design education

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**Abstract** | The authors present a pedagogical model for delivering future-focused design education, drawing on “Collaborative Futures” as a case study. This project brought together a cohort of final year design students and early career design graduates who worked in collaboration with the Glasgow City Council to explore and prototype future-based, citizen-centred scenarios set in the context of Glasgow 2030, which focused on data experience, people, place and practice. The collaborative nature of the project extended learning beyond the higher education design studio – providing the students with the opportunity to engage in professional practice through collaborating with early career graduates, and with an external organisation and industry-experienced designers. The authors critically reflect on the context-led project process, the collaborative design culture fostered, and the future-focused outcomes – theoretically unpacking the value and challenges of studio-based learning and multidisciplinary collaboration, insights from which are shared as a transferable pedagogical model for design educators.

**KEYWORDS | : FUTURE-FOCUSED, DESIGN PEDAGOGY, CITIZEN-CENTRED, COMMUNITIES OF PRACTICE, KNOWLEDGE ARTEFACTS**

## 1.0 Introduction

In this paper the authors present a pedagogical model for delivering future-focused design education, drawing on *Collaborative Futures* – a project delivered as part of the Masters of European Design programme at The Glasgow School of Art (GSA). This project brought together a cohort of final year design students and early career design graduates, who worked in collaboration with the Glasgow City Council (GCC), professional designers, and civic and academic stakeholders to explore and prototype future-based and citizen-centred scenarios set in the context of Glasgow 2030. With a focus on data experience, people, place and practice, the aim was to explore, evaluate and prototype emerging frameworks for open innovation so to inform GCC’s strategic aim to be recognised as a well governed city that listens and responds to its citizens. The collaborative nature of the project extended learning beyond the higher education studio context – providing the design students with the opportunity to engage in professional practice through collaborating with early career design graduates, and with an external organisation and industry-experienced designers.

This pedagogical model, now in its sixth iteration, has been implemented in a range of contexts. The first (in 2014-15) explored the future of social services in collaboration with the the design division of Hitachi; the second (in 2015-6), third (in 2017-8) and forth (2018-19) explored the future of banking in collaboration with the Royal Bank of Scotland (see Ross, 2018). This latest iteration (2019-2020) is the first time, however, that a researcher (Author A) has been embedded in the project. Based on this research conducted alongside the project delivery, the authors critically reflect on the context-led project process, the collaborative design culture fostered, and the future-focused outcomes – theoretically unpacking the value, impact and challenges of studio-based learning and student-graduate collaboration in a multidisciplinary team. The

relational and experiential proximity highlighted in this project is discussed through the lens of Communities of Practice (Lave and Wenger, 1991; Wenger, 1998) and Boundary Objects (Star and Griesemer, 1989; Binder et al., 2011; Brandt, 2006), insights from which are shared as a transferable pedagogical model for design educators. The paper begins by describing the evolution of the model and the key design practices informing it before setting out the research framework employed to gain an empirical understanding of the pedagogical process. The authors then present the case study and, through discussion, unpack their key insights. The paper concludes by the authors summarising the implications and value of their findings for delivering future-focused and citizen-centred design education.

## 2.0 Evolution of the Pedagogical Model

Design Innovation seeks to address complex social, cultural, political, economic and technological challenges through context-led collaborative and creative engagement with communities and individuals. As a practice, Design Innovation is underpinned by the ethos of social design (Bannon and Ehn 2011; Manzini 2015) and participatory design (Binder et al., 2011; Björgvinsson, Ehn and Hillgren, 2010; Frauenberger et al., 2015; Simonsen and Robertson, 2013); drawing on co-design and speculative design approaches and principles as a critical exploration, examination and evaluation of the opportunities that may lead to preferable futures. Key here is recognising users and potential users of design and other stakeholders as experts of their own indigenous knowledge and “experience domain” (Sleeswijk Visser, 2009: 5), and their repositioning in the design process as equal collaborative partners with the designer (Sanders, Brandt and Binder, 2010). Collaborative Futures points more specifically to speculative (Dunne, 2008; Dunne and Raby, 2013) and transition (Foth, 2018; Irwin, 2015; Irwin, Kossoff and Tonkinwise, 2015) design approaches. As described by Dunne and Raby (2013: 3–6), speculative approaches are used to explore alternative futures so to better understand and critically reflect upon the present, whereby design is used to provoke and open up debate. Centred on embedding these approaches, the curriculum framework underpinning the project has evolved over a series of iterations. The intended learning outcomes for the students centred on developing professional practice through collaborating with external partners, creatively engaging with users and stakeholders, producing a range of designed deliverables, and communicating the outcomes of the project to a range of audiences.

At GSA, pedagogy is centred on the principles of social and collaborative learning in the shared and immersive environment of the studio (Lynas, Budge and Beale, 2013) that scaffolds a culture of exploration, experimentation and prototyping (Bull, 2015), and which seeks to foster a Community of Practice (Lave and Wenger, 1991; Wenger, 1998). Within this, as learners become more fluent in their design practice, they are engaging in a tacit sense-making and reflective dialogue between themselves and the making and problem-solving process, and with their peers (Budge et al., 2013; Schön, 1985; Shreeve, 2015; Zehner et al., 2009). Drawing on these key tenets of studio-based learning, the pedagogical model presented in this paper supported the student-graduate team to work on a live project, undertaken over three discreet phases, and which required the generation of a series of designed deliverables described below.

### 2.1 Phase 01: Discover and Define

The aim of Phase 01 is to scope the context through combining quantitative and qualitative research methods – conducting desk research in parallel to ethnographic engagement and interviews with expert stakeholders. Research insights are then translated into a visual data bank that can be contributed to by the collaborators, as well as drafting emerging themes into a set of *Research Cards*. Research Cards have become a key component in this phase of the model over the last six years. Converting research themes, which at the early stages of the project can feel conceptual and abstract, into physically designed artefacts provides the student-graduate teams with analytical lenses through which to view, sort, and interrogate subsequent data through (see Figure 1). The Research Cards are subsequently iterated over the course of the project (used as an analytical tool in Phase 02 and presented to project partners as a designed outcome in Phase 03).



Figure 1. 2015, 2016. Research Cards from Previous Collaborative Futures Projects.

## 2.2 Phase 02: Develop

The aim of Phase 02 is to translate the research themes into a family of knowledge artefacts and refine these through conducting primary research. In-line with speculative design approaches, this includes prototyping a future world (in this project, an imagined Glasgow 2030), a suite of future citizens who would populate neighbourhoods in this world, and a set of scenarios forecasting narratives that characterise the citizens' behaviours, beliefs and interactions. These knowledge artefacts are also used as speculative tools in the design of creative engagement workshops with participants (citizens and stakeholders) to further exploration. At touchstone points during this phase, expert input is provided by faculty, and by external designers and researchers, to support the student-graduate teams to synthesis and evaluate their research.

## 2.3 Phase 03: Deliver

Following the engagement workshops, the student-graduate team undertake formal analysis so to generate the final, fully realised, suite of knowledge artefacts. Other key project deliverables include producing a set of indicative design directions for the project partners, a range of materials setting out the project design process and the student-graduates evaluation and reflections of this, and a digital archive.

## 3.0 Research Design

In seeking to gain an empirical understanding of the pedagogical process, the embedded researcher (Author A), gathered experiential insights from the teams, with the aim to inform the design and delivery of the next iteration of the project and to answer the following research questions:

1. In what ways does the pedagogical model support interdisciplinary collaboration between the student-graduate team, the Glasgow City Council, expert stakeholders, and external participants?
2. In what ways can Design Innovation be embedded as an approach to future-casting the experience, needs and opportunities of Glasgow's citizens in 2030?

The insights presented in this paper were collected through observations, student-graduate feedback, reflective project blogs (with contributions from the students, graduates and GCC team) and from an evaluation group interview with the student-graduate team. In section 5, the authors draw on the theory of Communities of Practice (CoP) (Lave and Wenger, 1991; Wenger, 1998) to unpack key learnings pertaining to the relational proximity of collaboration that took place across the teams. As described by Wenger, CoP positions the social and collective nature of "learning as social participation", whereby communities are predicted on practice (1998: 4). As described in section 2.0, establishing and sustaining a CoP is core to studio-based learning – theory which underpins the pedagogical model presented in this paper. Building on this, Boundary Object theory (Star and Griesemer, 1989; Binder et al., 2011; Brandt, 2006) will be drawn on to sense-make the role knowledge artefacts played in future-focused engagement and the experiential proximity of exploring the near and distant future so to critically reflect on the present. As Star and Griesemer explain, Boundary Objects can communicate

across and connect diverse social worlds whilst retaining distinct and idiosyncratic meanings, as “their structure is common enough to more than one world to make them recognisable” (1989: 393).

## 4.0 Case Study: Collaborative Futures

In this section the authors present the Collaborative Futures case study before discussing the key learnings, implications and value of the project as a pedagogical model in resonance to the underpinning research questions set out in section 3.0. The case study is structured by the key touchstone activities that occurred in each phase, evidencing the relational proximity concerning the nature of collaboration, and experiential proximity concerning the role of knowledge artefacts in the context of future-focused, citizen-centred design education.

### 4.1 Discovering and Defining: knowledge landscapes

The Collaborative Futures project launched in September 2019 with an induction, where both teams collectively unpacked the project brief. As a key objectives was to explore and prototype what a well-governed city might look like in 2030 pertaining to the role of data and how GCC could support greater citizen-centric decision-making, a panel of expert stakeholders were invited to speak on the key community challenges in Glasgow. This included a community engagement officer, a corporate service reform manager, a digital officer, a cancer-care expert, and a city development planner; key project stakeholders who were consulted through the project. Following the launch day, the student-graduate team immersed themselves in a period of desk research in the studio as well as engaging in site visits to observe community council meetings, and interviewed a range of expert stakeholders. Over the course of Phase 01, the research was iteratively layered upon as the student-graduate team worked in a process of collective sense-making. This included moving between insights, interview transcripts and photographs that were physically tangible (see Figure 2), to digitally translating these into a shared online data bank. Here a process of thematic analysis and mapping took place and led to the construction of, what the student-graduate team referred to as, *knowledge landscapes* (see Figure 3). As the topic of the brief remained broad in Phase 01, this cyclical process was described by the team as intuitive and tacit in nature, whereby a “feely-ness” was needed when “swimming” in the research. The landscapes were shared with and contributed to by the GCC team, which became an online platform for exchanging ideas and knowledge between the teams. However, when reflecting on efficacy of this distributed way of collaborating, the student-graduate team highlighted the challenges of managing the virtual working space, with the need to often sift through and filter out content so to demarcate key lines of inquiry.



Figure 2. 2020. Collected Insights, Interview Transcripts and Photographs.



Figure 3. 2020. An Example of a Digital Knowledge Landscape..

#### 4.2 Developing: design knowledge artefacts

During Phase 02, an additional cycle was introduced into the process in the form of synthesising and, as described by the student-graduates, “re-physicalising” the knowledge landscapes. One form this took was the first iteration of the Research Cards. The cards were used in subsequent workshops with the GCC team as a baseline to measure emerging insights against and to finally frame the project through the over-arching lens of *data*, *governance* and *citizenship* (see Figure 4). Another form this took was the development of designed artefacts to materialise the research into a tangible world with four neighbourhoods, each containing a range of prototyped objects that critically personified the neighbourhood themes. These artefacts were used to facilitate a co-design workshop with both teams, which become a key cornerstone in the project. Reflecting on this workshop in particular, the student-graduate team recalled how the artefacts themselves, in their unfinished form, were able to scaffold collaboration and a coalescence of ideas and consensus across the teams. Up until this point, the student-graduates had observed how the highly explorative and emergent nature of the project and studio-based working differed to the other team’s working practices; reflecting on the need to align expectations around, as described by the student-graduates, “embracing ambiguity”.



Figure 4. 2020. Research Cards and Co-designing the Landscapes..

Phase 03 centred on collecting primary research through the design and delivery of two workshops where the student-graduate team engaged with groups of citizens and expert stakeholders. The aim of the workshops was to explore with participants this future world, with activities framed around, as described by the student-graduates, “collective envisioning”. The knowledge artefacts developed in the previous phase were translated into a suite of workshop engagement tools. This included artefacts to enable participants to be metaphorically transported to the future neighbourhoods, where they could explore and reflect upon their values, fears and desires for the future of citizenship,

modes of governance and data experiences, as well as explore their own ideas of a preferable futures (see Figure 6). The student-graduate team translated their research into a selection of tokens to connote, for example, data use in decision-making, digital applications, working practices, trust and perceptions of governance, and community participation. Participants were asked to build a picture of their values by choosing tokens that resonated with their present-day self. At the end of the workshop, the participants were invited to re-visit their pictures to reconstruct a 2030 vision of themselves. Following the picture-building activity, the participants explored each neighbourhood with the student-graduate team, facilitated by the use of design artefacts and narratives that embodied key tenets. As an example, in one neighbourhood narrative, citizen's emotional reactions are passively monitored by the council through skin micro-chips, a future concept that was role-played in the workshop by giving each participant a medical bandage to wear that had a chip (taken from the inside of a subway ticket) attached to it.



Figure 6. 2020. Workshop Engagement Tools.

Evaluating the workshop activities and their future-focused nature, the student-graduate team reflected on the participants' readiness to engage in speculative imagining and ideation. In some cases, the envisioned neighbourhoods, whilst based on collected evidence, were experienced as too far removed from reality for the participants to relate to or see as plausible. Or, conversely, in some cases participants found the neighbourhoods to be too close to reality and struggled to look beyond the present-day. Reflecting on the role of the engagement tools as conduits to support the participants to suspend their disbelief, the student-graduates described the need for the tools to be more performative, sensory and "visceral" – so to provide participants with an immersive and empathic experience that could enable them to transcend their assumptions, perceptions, and boundaries of the present day.

#### 4.3 Delivery: Glasgow 2030

Returning to the studio, the student-graduate team spent time analysing insights from the workshops, and, in collaboration with the GCC team, distilled these down into three core themes: *understanding data through citizens' experiences*, *data inequalities*, and *value exchange*. These themes were used as propositions in the final iterations of the neighbourhoods (see Figures 7). Within each neighbourhood belongs a suite of citizens who engage in a series of scenarios – knowledge artefacts used to communicate potential future narratives of Glasgow 2030.

The first neighbourhood was *Choicetoun*, which explored the theme of understanding data through citizens' experiences, where the council maps citizens using data from multiple sources and various methods of engagement. With *Choicetoun*, the council has resources and a database to analyse streams of data using a range of tools but allows people to have control in designing their level and mode of engagement and have the choice of what data to input. The second neighbourhood, *Localtoun*, explored the theme of data inequalities and the proposition of the council supporting citizens to take on more responsibility for their neighbourhoods through making data more transparent. Within this neighborhood and citizen narratives, the student-graduate team explored decentralised decision-making, and how citizens could be empowered by data. The third neighbourhood, *Efficiency*, explored the theme of value exchange, where data has become a conduit between citizens and the council facilitated through online interactions and AI technologies in the home.



Figure 7. 2020. The Final Project Outcome: the three neighbourhoods and citizens of Glasgow 2030.

In summary, this Collaborative Futures case study evidences the emergent nature of a live collaborative project, and highlights challenges faced by the student-graduate team in terms of employing future-focused and speculative design approaches. In the next section the authors discuss their insights surrounding the relational and experiential proximity of collaboration and the role of design artefacts, drawing on CoP and Boundary Object theory.

## 5.0 Discussion

In this section the authors discuss their key insights pertaining to the collaborative design culture fostered in the project and the future-focused outcomes – theoretically unpacking the value, impact and challenges of collaboration and the role of design knowledge artefacts. Returning to the underpinning research questions (see section 3.0), and based on the student-graduates' own recommendations, the authors reflect on the implications and value these insights have for the pedagogical model for delivering future-focused, citizen-centred design education.

### 5.1 Relational Proximity: cross-cultural collaboration

Reflecting on the relational proximity of collaboration, various forms and degrees of collaboration took place in this project – between the student-graduate team, between the student-graduate and GCC teams, and between the student-graduate team and the participants (which the authors will return to in section 5.2). Establishing a culture of social learning within the studio-based context is a fundamental aspect of the project. However, and as evidenced in the case study, challenges emerged in sustaining this across the two teams. As reflected on by the student-graduate team, the relational proximity of collaboration was both geographical (as, for the most part, the two teams were based at different locations) and occupational in terms of understanding the value, conventions and structures of each other's working practices. Based on their shared educational experiences at GSA, the student-graduates have collectively developed a repertoire and instinct for handling the emergent, and often ambiguous, nature of an inductive project. Whilst this project's approach held a level of familiarity to the student-graduate team, this intuitive and shared understanding, at times, assumed a similar level of connection with the partner team, taking for granted that this was the partner's first time in engaging with this project.

Furthermore, the internal working structures of the two teams seemed to differ. Whilst the industry partner appeared more traditional in terms of defining roles and responsibilities, the student-graduates' was less hierarchical, enabling members to test out roles, rotate positions and work more freely together. When the two teams came together, usually in the format of a workshop, these factors could either lead to lively debate or inertia. It seemed that the project had brought together two diverse communities of practice, whose practices often remained independent as opposed to inter-dependant of one another. Over time, however, a shared project language became equally used by both teams as key deliverables began to materialise. This exchange of knowledge and adoption of language aligns with Wenger's theory of CoP and how boundaries of discrete communities can begin to cross and permeate each other through a process of brokering (1998: 105). As proposed by the student-graduates in their Design Recommendations, designing in mechanisms early on in the project to articulate and demonstrate to the partnering team the value of embracing ambiguity could have incited more meaningful collaboration. As a learning opportunity, the student-graduates recognised the potential benefits of designing a cross-team ice-breaker session at the start of the project as a way to unionise the two CoPs from the offset. Here individual working practices and assets, as well as anxieties, could be raised and externalised; and, based on these, a project trajectory could be negotiated and mapped out together so to more effectively align expectations.

## 5.2 Experiential Proximity: knowledge artefacts

The authors will now unpack the brokering role the design knowledge artefacts played as tools for engagement with the project participants; discussing the experiential proximity of speculative, future-focused co-envisioning by drawing on Boundary Object theory (Star and Griesemer, 1989). As set out in the case study, the engagement workshops brought together groups of citizens to critically reflect on their experiences and values based on the themes of citizenship, governance and data. The engagement tools were designed to support the participants to test out their assumptions and to bridge these futures so to reflect on the present. Across the workshops, various degrees of participation took place, evidenced in how the participants were able to connect with, or not, to the future narratives and propositions contained within them. A key challenge highlighted by the student-graduate team was the provocative nature of the tools, which, in some cases acted as metaphorical vehicles to transport participants into the future, and in other cases became road-blocks.

As each participant brought with them their own latent subjectivities, the student-graduates had designed the tools with the aim of being generally understood by the wider workshop group as well as being reflexively interpreted on an individual basis by each participant – characteristic of Boundary Objects. The tools were most effective when they supported participants to go beyond how these narratives pertained to their own life-worlds, to explore as a group inter-subjective envisioning for the future. However, the student-graduates described the challenges of presenting new “variations on reality”, suggesting that participants seemed less engaged in narratives proposing changes to intangible structures (such as alternative economies or societal models), as opposed to more tangible forms (such as technological devices and digital applications). In conversation with the student-graduates, they identified several short-comings in their workshop design and the degree to which the tools could facilitate a meaningful experience for the participants in parallel to gathering rich research insights. In particular, whilst the tools acted as a form of consciousness-raising, they were limited in supporting more radical forms of speculation. The student-graduates recognised that suspending disbelief needed to be carefully calibrated as, in some cases, the tools asked participants to engage with narratives that were either too close to present-day phenomena or, conversely, too far removed from their realities to be conceivable. The tools were having to not only mediate the metaphorical proximity between present and future, but also between the believable and mythical.

## 5.3 Key Learnings for the Pedagogical Model

This iteration of Collaborative Futures has raised valuable insights that will inform the underpinning pedagogical model for future delivery in terms of how cross-cultural collaboration is set up and then sustained as a project unfolds; mechanisms to support cross-team knowledge and skills exchange; and the role design knowledge artefacts play in facilitating participation. Returning to the underpinning research question (as set out in 3.0), as a learning experience, it provided the student-graduates with the opportunity to engage in interdisciplinary collaboration with an external professional team, stakeholders and participants. Furthermore, it was equally an opportunity for them to build upon their design practice through undertaking a design-research process to future-cast the experience, needs and opportunities of Glasgow’s citizens in 2030. A key area for future research is to track, measure and evaluate the impact of the project outputs in terms of informing GCC’s future work, and if and how they plan to adopt the proposed design directions presented by the student-graduates. Furthermore, the authors observed the development and confidence of the student-graduates’ own critical voice – through prototyping, testing and evaluating their design approaches – arguably developing student-led contributions to the field of Design Innovation. Thus, this iteration of the pedagogical model fostered both deeply methodological learning as well as contextual learning. A future opportunity to extend professional practice as a learning outcome is to explore the potential of supporting the student-graduates to theoretically unpack their insights, which for them often felt tacit in nature, and mentor them in authoring their own academic outputs.

## 6.0 Conclusion

To conclude, the aim of this paper was to evidence the authors’ key learnings for delivering future-focused and citizen-centred design education, drawing on Collaborative Futures as a case study. Framed around the themes of relational and experiential proximity, and drawing on theories of CoP and Boundary Objects, the authors have reflected on the challenges surrounding cross-cultural collaboration and employing speculative design approaches in a live project. As a transferable pedagogical model, the authors argue that this studio-based, phased project approach elevated the student-graduates’ design and professional practice by developing their research skills, teamwork, capabilities in creatively engaging participants, and nurturing their criticality in evaluating their design approaches. So to position this model within the wider design pedagogical landscape, and whilst out with the scope of this paper to more fully explore, in future research the authors seek to further document and evidence the value and impact of Collaborative Futures (the next iteration taking place 2020-2021), in parallel to undertaking a comparative analysis of the previous iterations (building on the work of Ross, 2018) as well as researching models being delivered by other higher institutions.



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