



Article

An Instrument of Transformation – Introducing a Creative Futures Pedagogical Framework

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Abstract

As a draft plotline for the transformation of design learning, the paper introduces a new Creative Futures Pedagogical Framework for creative Higher Education as a mechanism for addressing the need for the sustainable transformation of creative teaching and learning. The Design, being piloted within a government funded, transdisciplinary, distributed, national Creative Futures Academy (CFA) project, shapes an exploratory intervention in the education system that begins to tell a different future story. The paper seeks to evidence the application of Futures thinking beyond the content and communication of design learning, and instead, utilises it to radically re-imagine a curriculum capable of framing a future for design knowledge creation.

Keywords

Pedagogical Innovation, Design Education Futures, Pedagogical Framework, Design for Transformation, Curriculum Design

Positioning

Design is an invaluable tool for interpreting, making and shaping our collective futures, with design education providing the theoretical and practical foundations to create literate practitioners who are capable of visualising a preferred future. Educators Laura Cléries and Andrew Morrison (2020) describe design as a poly-discipline “able to take the pulse of the world, enabling or responding to global challenges and behaviours. Design entangles, through time, relationships between people and their built environment and enacts cultural expressions.”

That entanglement is perhaps the key to navigating an ongoing debate about where or how Futures sits in a design education paradigm. In discussion, during the Design Council UK’s 2021 Design For Planet conference, systems architect Indy Johar and radical economist Kate Raworth point to a new world-view that moves away from an object-subject perspective, to visioning an order of re-understanding ourselves and being in entreaty with the world. Everything is entangled, things should be tangled. Our relationships with those things can no longer be based on their value as owned objects, but as objects in their own right, following a “many to many” model (Johar and Raworth, 2021). Viewed objectively, Futures is valuable for many disciplines, fields, and interests. In Design Education, Futures is entangled with all practices, content and thinking whether it is explicit or not. However, echoing the thinking of Futurist Richard Slaughter (2008) – that bureaucracies, organisations and leadership defocus the future and jeopardise innovation – Futures mindsets rarely move beyond the façade of disciplinary learning and teaching to the offices of Academic Affairs, Teaching and Learning and Academic Development.

This paper introduces a pedagogical Framework that exposes a structure for creative and design education, allowing it to become capable of housing Futures capacity, as an intrinsic part of the ecosystem (Seimens, 2005). In a sense, the Design presented in this paper is an act of Life Based Learning (Staron, 2011), having grown from participation in, and resistance to, the existing design knowledge systems (Tonkinwise, 2015). It is a piece of Design Fiction (Sterling, 2009) in the sense that it structures without expectation, giving imaginative and cognitive responsibility to its users by staging the narrative but not scripting the story.

Reviewing Futures history (Schultz, 2015) is valuable and necessary to support reflexive practicing in the future,

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but what it highlights is what could be seen as a patriarchal, industrial story of the development of its methods and thinking. Beyond the Anthropocene, in Escobar's pluriverse (2018), where we need to look at how to grow the tree not just understand why the apple fell (Raworth, 2017), models such as the Futures wheel (Glenn and Gordon, 2009) could feel hard, while pillars, layers and questions can feel prescriptive (Inayatullah, 2008) unless used with expertise. The business of design education, futures. It designs for, into and through (Frayling, 1993) people's innate capacity to engage with changeable, changing futures (Slaughter, 2008), on a daily basis. The role of Futures in education so far has been additive: examples include but are not limited to, successful new specialist courses (Abdullah, 2022), transformative electives in existing courses (Ollenberg, 2018), innovative adaptation of learning approaches (Glenn, 1972; Barbara and Scupelli, 2021; Angheloiu et al, 2020) or training and upskilling of teaching (Bell, 2002). For the Design Education paradigm to grow knowledge generatively through adaptation, it requires Futures as Design [knowledge] to become the architecture, the fabric, of what we are building.

Architects Richard Rogers (1933-2021) and Renzo Piano's Centre Pompidou (1977) cut into and disrupted the historic heart of Paris. Conceived as an inside-out insertion into the life of a 19th century Parisian boulevard, the services and structure form an exoskeleton, leaving clear internal spaces for flexible use and programming. Its radicalism lies in planning to not occupy the entire site with a monolith, instead, half is given to a public piazza, an uncontrolled space where the city might engage with the building. The architects' aspiration was to create porosity for circumstance and context and to set conditions for social and cultural worlds colliding. The Centre Pompidou is a flexible container for imagining a different future. It actively challenges notions of object-subject ownership, value and impact. Taking this ever-changing architectural container as a narrative for the performance, adaptation and critical staging of an imagined education future, this pedagogical Design (Popp, 2013) opens up, interrupts, and makes porous, the discussion around Futures within Design Education.

Introduction

This paper sets out the prototype of a new pedagogical Framework for creative Higher Education piloted within a government funded, trans-disciplinary, distributed, national Creative Futures Academy (CFA) project. The CFA aims to support participants to shape their personal and collective creative futures by providing learning that encourages experimenting, innovating and acting on change. To deliver and facilitate these learning experiences effectively, the Framework acts as a Design, an instrument for transforming institutional and organisational knowing into a more agile, responsive system. It could be described as a strategic design for teaching and learning enhancement.

Encompassing a range of elements that structure new, participatory (Sanoff, 1990) ways-of-working to strengthen the development, delivery and teaching of learning, the Design focuses on enabling individual, team and organisational sense-making. The Framework adapts to the complex, nuanced and unpredictable settings within Design Education. Tested during the CFA pilot phase, each component is contextually relevant, embedded and designed to suit specific characteristics and circumstances (Simonsen et al., 2014) of this particular project, however, it elicits methods for working toward sustained transformation of these situations in a wider creative education application.

The Design, grounded in the experience of accelerated change in creative Higher Education in recent years, points to the effectiveness of connected, adaptive interventions in existing systems for learning. The body of knowledge generated through designing and piloting key components of the Framework during 2021/22, and evaluating impact during 22/23 are briefly described in this paper to support the introduction of the Framework as a Design for enabling Futures to be practiced critically within existing educational systems. In doing so, the paper attempts to evidence a mechanism which applies Futures thinking beyond the content and communication of design learning, and instead, utilises it to radically re-imagine (Walker, 2006) a sustaining intervention in the context, the system, for teaching and learning design.

This transformation of the design learning system is necessary for design – as a sector, as a discipline, as a way of being – to continue to re-shape our perception and understanding of the world. Identifying a device capable of transitioning this system creates opportunity for all participants in, around and produced by it to make sense of the global narratives as they unfold; it holds space to anticipate change (Bishop and Strong, 2010), instead of reacting

to change.

Creating Space to Practice Anticipating the Future

Design learning institutions are places for the generation of design thinking and designed knowledge. With the evolving criticality of the need for regenerative approaches to designerly ways of knowing (Cross, 2006) and doing, these organisations have a responsibility to shape a pedagogy that begins to tell a different design story.

In a publication accompanying the exhibition *Designs For Different Futures*, Ezio Manzini states that the only certain thing about the future is that it will entail a profound break in continuity with the ways of doing and being that we are used to (Manzini, 2021). Borrowing from Frayling (1993), it can be understood that designers exercise imagination and accept uncertainty when researching for, into, and through notions of the future; the Design School has an opportunity to scaffold this break-point to ensure it becomes an active, critical domain of inquiry which reimagines a collectively needed, longer-term, design-ed notion of future foresight (Scupelli et al, 2016).

Social Constructivist theory posits that prior experience acts as scaffolding for knowledge generation. Reliant on audit processes, design institutions and their pedagogies are built on collated, prior patterns, on knowns, which limits scope for systematic risk and exploration of unknowns. The future asks us to build with what we have experienced, through change, and to construct new knowing, therefore extrapolating current frameworks onto this future feels unnecessary (Berardi, 2017). The future requires visualisation of what might be (Manzini, 2020), developed in facilitated collaboration to explore fact-based directions that move away from the Anthropocenic tendencies which led us to this point in the narrative. In doing so, this visualisation of a future challenges the capitalist neoliberal trends that have shaped educational institutions. Following Manzini (2015) this collaborative effort reimagines the learning community as an open-ended space. This future community will learn through conversation and dialogue, from their positions of autonomy, to re-think, re-form and re-view design in diffracted (Kaiser and Theile, 2014) Communities of Interest – imagined as practices embedded and involved from differential positions instead of disciplinary oppositional stances (Haraway, 1992) as promoted by current creative educational infrastructures.

Re-viewing and re-forming design and creative knowledge requires the ‘framing’ to be reconsidered. For the infrastructure of design learning to progress to meet a future (Inayatullah, 2008), it must be released from its function as a cognitive frame, as a gestalt (Berardi, 2017). Following Schön (1991), enabling the framing itself to perform as a move toward solutioning, with evaluation of this action creating opportunity for new moves or indeed a new frame, learning might be reimagined as part of a bigger focus on growing a restorative learning ecology (Siemens, 2005) with institutions, organisations, and the design sector.

The Design School as a Signature Pedagogy

In discussing restoration of the design learning system, it’s pertinent to understand that the Design School is a signature pedagogy, with distinct cultural practices, ways of teaching and modes of being, acting and becoming (Schön, 1985). In the design studio, all ideas, practices and values are linked under uncertain conditions, and judgement is required to both act and to understand the consequences of those actions (Shulman, 2005). Design studio learning distinctly follows an ontological approach (Adams et al, 2011) which concerns shaping change in the whole-person, as opposed to providing knowledge in an epistemological approach. In the design studio, teaching is learner-centred (Prosser and Trigwell, 1991), peer engagement is key and the tutor is a mobile element shaping intellectual and creative movement through dialogues as part of the process of learning in a community environment (Wenger, 1998).

The design studio, as part of a signature pedagogy, can be discussed as a phenomenon in design education. It is a connecting space between learning and professional practicing, it is mutable by necessity, its approaches and techniques for learning are dependent on their continuing validity; a learning experience should support participants becoming designers who can respond to the critical issues of society, environment and economy. It is vital for teaching and learning practices to evolve with external conditions and conversations in order to prepare graduates for the changing world.

As the responsibilities of design change, so too, the response and engagement of the signature pedagogy requires reform. For the pedagogy to change, the infrastructures and systems that hold it, the framing, must be evaluated,

and perform differently. The Design School requires flexibility to move into different kinds of studio delivery. It is necessary for design pedagogy to grow different types of skills and knowledges. Design education must incorporate varied methods of teaching and learning, and assessment, and with that, shape adaptable approaches to ongoing programme, course/module/delivery evaluation methods. In the current infrastructure (as described from a situated context in Northern Europe) institutional evolution is, in most cases, challenging, due to systems enmeshed in embedded knowledge, with limited scope for changes to affect more than the graduate typology.

Visualising a Design Future

The value of visioning is not only in the envisioning of something, but in the way it connects that which was previously detached or unknown, to the other. And in design[ing] visions, the potential is to create collectives from across disciplines (Furniss, 2015), experiences, organisations and geographies (Dorst, 2021) which forges opportunity to build social *Communities of Interest*, and thereby, a paradigm change in collected, collaborative thinking and doing (Ceschin and Gaziulusoy, 2016) within Design Education.

Designing Design Education (Böninger et al, 2021) is a whitebook on the future of design education, a compendium of dialogues that provide a set of curated, directional statements on imagining the future of design education. In its European sessions in 2019, an underpinning story about visioning and visualisation emerges, echoing Manzini's (2021) thinking. It is surmised that there is no clear answer for what the future will look like, therefore educators have to prepare students in a state of unknown, for a future that is not known and cannot be seen.

Envisioning a Future Designer

In the imagined future, designers will play diverse, emergent roles across strategic, tactical and operational domains (Gaziulusoy and Öztekin, 2019; Abdullah, 2021; Rogers and Bremner, 2019; Escobar, 2017), yet these are currently, generally, not supported within the existing, disciplinary-led Communities of Practice structure of Design Education. Educator and researcher, Idil Gaziulusoy (2022) states that for the needed roles to emerge, new imaginaries must be created at a systemic level in education, that the right vocabularies and language must be used for design to be heard. If visions of the future are to be understood as performative in the present, these visions must be practiced in real life and in the real world (ibid), they must intervene in the systems and work with deep leverage points to create sustainable change (Meadows, 1999).

New Knowing – Framing Pedagogical Futures

In discussing sustainable design learning change, knowledge is the source of emancipation – for both institution and learner – in growing distinctly within the entangled state. This thinking might fall under a *Design for Transition* (Tonkinwise, 2015) mindset applied to the Design Education context, for if design pedagogy is to transform towards learning as transgression (hooks, 1994), it needs to create the movements and systems where new languages can grow knowledge.

Practicing Real-life, Real-world Change

Significant change in Design Education often has to be externally facilitated; collaboration, adaptation, new ways-of-working, multidisciplinary or transdisciplinary teaching and learning usually require prompts such as external financing, clients or policy to permit institutions, and to empower staff, to act (Webber, 2022).

In 2020, the Irish Government funded a €10 million, four year coalition of Higher Education Institutions (HEIs) – led by the National College of Art and Design (NCAD) in partnership with University College Dublin (UCD) and Dún Laoghaire Institute of Art, Design and Technology (IADT) – to come together as the Creative Futures Academy project. The project ambition is to enhance undergraduate and postgraduate learning provision by building programmes in a shared model for flexible, stackable, micro-credential study. In its pilot year in 2021/22, in NCAD, the undergraduate space is utilised to interrogate the potential for growing new restorative teaching and learning models that might redefine the structure of knowledge creation (Martin, 2022b) across the project for all learning

levels.

The Creative Futures Pedagogical Framework

At a time when higher education institutions are being challenged to evaluate and develop their current systems in a rapidly evolving environment, there is a pressing need for the development of frameworks that place a strong, integrated focus on pedagogical enhancement. In Ireland, the National Forum for the enhancement of teaching and learning in Higher Education developed a Disciplinary Excellence in Learning Teaching and Assessment (DELTA) Framework. This guides institutions in planning and prioritising their efforts, aligning goals to national and international benchmarks.

In the CFA project within NCAD, a primary intervention is the design of a Creative Futures Pedagogical Framework (CFP Framework). Alongside docking elements for integrating the CFP Framework with existing institutional systems, this Design imagines new module architecture; a Participatory Evaluation System for staff and learners; a universal delivery model and structures for teaching; assets and processes to support staff in delivery. Combined, the CFP Framework and its assets could be described as the draft of an effective plotline for transformation (Candy & Kornet, 2019) in creative and design education.

Transdisciplinary in its thinking and practice, the CFP Framework embodies approaches from across research fields, aligning primarily with Critical Design and Futures Design to inform moves for the creation of a Design Education Imaginary (Gilbert & Lennon, 2005). Applied to the educational space, the Framework takes emergent thinking around Critical Futures as a hybrid area of research (Candy & Kornet, 2019). In execution, the Design actively incorporates Critical Speculative Design (CSD) (Mitrovic, 2015) as a teaching and learning method for distilling a Participatory Design infrastructure that holds and grows the visions of change produced by the curriculum.

As a stage for moves and evaluations within the existing, overarching frame of knowledge creation in the institution, the CFP Framework is understood as a performative act that responds to the *critical condition of now*. However, design theorist Anne-Marie Willis (2019) points to the possibility of creating a ‘crisis of imagination’ as one risk of responding to ‘the now’. The Design installs an infrastructure which supports and directs the characters, narrative and the pedagogical production to engage with the complexity of the organisational conditions. It provides a mechanism re-focusing and innovating for the system, in the system: acting as a dynamic device for imagining the future in education (Slaughter, 2008). As a staged performance, the Design aligns with the Futures Action Model (FAM) developed by Futures theorist and educator José Ramos (2013), as an experience of imagining futures, where, in this scenario, teachers and learners actively engage in contexts which allow for solutions, instead of passively absorbing information (Schön, 1983). The FAM model supports and directs participants to move from foresight to innovating around known problems, and, is described by Ramos as a form of anticipatory action learning, which, following Inayatullah (2002) locates futures and strategy together in an action-based, engaged learning cycle of planning, acting, observing, reflecting. The concept of bringing futures and strategy together is seen in the CFP Framework which incorporates a five-step Problem Based Learning (PBL) approach (Koschmann, 1994) into its cycle to map staff and learner action through imagining and foresight, and into solutioning – whether in project-time as a learner, or in the designing, delivery and evaluation capacity as a teacher.

In addressing both the teaching and the learner needs, the Framework nurtures knowledge creation through action-learning, on all sides of the participatory experience. In doing so, the Design allows space between stimulus and response (Covey, 2004) aligning to theory that the process of creating and dealing with situations is rooted in self-regulation (Zimmerman, 2000). Modelled as three phases, a process of self-regulation is seen as representing capability through a sequence of: forethought (planning and decision-making), action/performance (integrating and applying) and reflection and meaning-making (thinking, comparing and attributing).

The Framework in Practice

A critical aspect of successfully embedding self-regulatory processes into the activities within this Design, is to employ designerly ways of knowing (Cross, 1999) and reflexive practice in the development of its pedagogical positioning.

Within the first pilot phase of this Framework in 2021/22, five new courses sit inside existing module vessels, as connected learning experiences for the undergraduate learners. These courses are delivered in remote or hybrid studio modes, with cohort sizes averaging 26-35, and run in the School of Design for twelve weeks during a fifteen week trimester. A sequential set of two synchronous ‘thematic’ courses, that support learners in designing for transformation, test the Framework to its fullest extent. In the first trimester, these two courses are shaped as a research-led studio where learners build knowledge of change in and around design. In the second trimester, these courses become two distinct research labs; one is about a tangible, material understanding of change in action, and the second aims to discover the invisible systems, policy and governance around designing change. In evaluating and communicating the Creative Futures Pedagogical Framework – its design, strategic impact and pedagogical value – it is these sequential, synchronous courses that provide data and inform the narrative.

Setting the Framework

Mapping the process of the new course delivery (Figure 1.) is supported by a Designing, Developing and Delivery Procedure which creates visibility around new staff and course directions, thereby limiting the institution risk. Elements such as the Learning Development Guide (LDG) (Figure 2.), the Typology (Figure 3.) and the Delivery Model and Structure (Figure 4.) are used to enhance the staff recruitment and onboarding process, and to support the development of changed teaching and learning experiences or models for course concepts. Integrating knowledge capture and measuring approaches within established processes such as evaluation – see the Reflection Re-action (Figure 5.), Reflective Evaluation of Delivery (Figure 6.) Discursive Evaluation (Figure 7.) – introduces modes for evidencing impact and thereby validating the changed organisational models.

The following sections describe key elements of the Creative Futures Pedagogical Framework, their application and function as part of a dynamic, capable system to intervene in teaching and learning within creative Higher Education. Grouped under three phases of the Self-Regulatory model (Zimmerman, 2000) indicates the way and stage at which the elements are used.

Planning and Decision-making

All design moves along a path from ideation to solution and proposition. Embracing the five aspects of design capability (Cross, 2006) to respond to the ill-defined problem of design education, the Design redefines and adapts to problems, as it evolves, during project-time. In the Pilot Phase, the staff teams engaged in delivery are seen to hold parallel lines of thought (Lawson and Dorst, 2009) for the duration, actively re-thinking and re-contextualising in response to the shifts of perspective and altered views of the problems, or solutions, that the Framework elements offer in play. This activity requires real-time analysis and synthesis, and is an example of Design Thinking as dual processing (Tovey, 1984).

Process Map

The Process Map is a CFP Framework tool to assist teams in analysing and acting on shifts, during delivery, to design with the problems of delivering teaching and learning (Figure 1.). Issued during onboarding, the Process Map shows the Design elements needed, where, when, and what role they play in delivery of the Framework. As a device, this map is essential in docking the new Framework to existing Quality Assurance processes; in creating visibility of how a new structure for delivery works; supporting new staff teams to navigate delivery; and in shaping reporting.

The value provided by this element, in this context and scenario, is the visualisation of a system for integrated teaching and evaluation throughout a module. Having this tool impacts positively on learner wellbeing by guiding staff to introduce embedded reflexive and autoethnographic practices at appropriate points across the delivery. The Map impacts on teaching by providing staff with a clear guide for what happens, when, how it connects and where that information is then applied across the delivery. For the institution it provides a transparency of the assets needed, elements required in preparation for, or during, delivery which allows a central resource to be built and maintained. The Process Map integrates elements that consciously capture staff and learner evaluation, in a distinct way to the existing Quality Assurance steps which gather post-experience feedback on teaching and learning. Current internal QA steps rely on annual student forums for general, academic feedback; a Higher Education Authority (HEA)

survey; and individual staff raising problems at a school level. There is, in this particular context, no universal approach to gathering experiential or wellbeing-based knowledge of delivery, with parity, or for generating knowledge through holistic reviews of delivery.

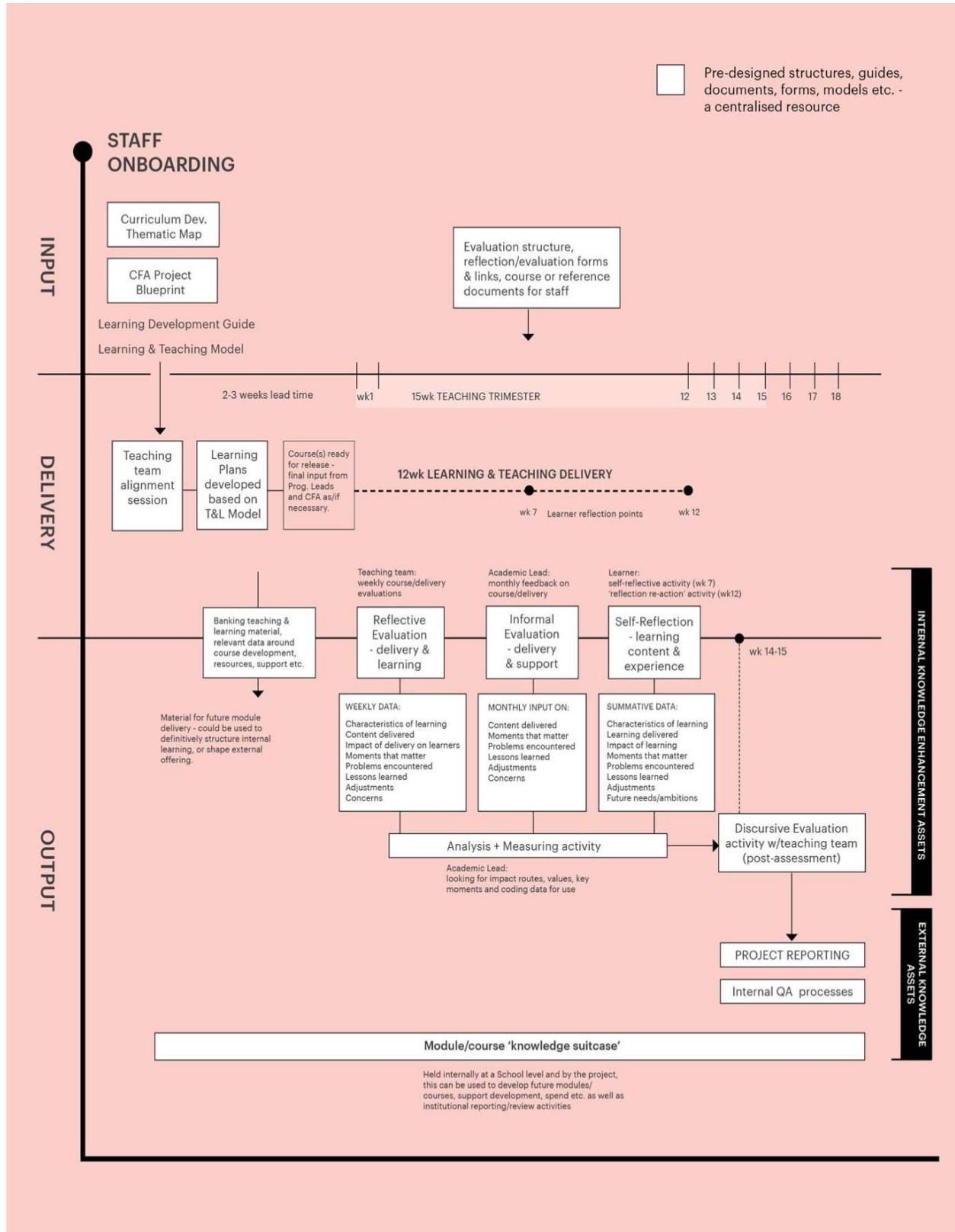


Fig 1. Process Map

Learning Development Guide (LDG)

For the CFP Framework to operate as a learning system, as well as delivering its learning, it has to build-in criteria that informs the framing, that supports moves, as well as tracks activity for evaluating impact, creating value and thinking for future transformation. It requires an element in the Framework that acts as an anchor and driver for mutual learning – of the staff and student, of the system and the project or programme. This element is the key to unlocking the potential of the Framework; innovating within a university [or other Higher Education Institution] requires more than ideas, it needs meaningful and useful educational practices that give concrete expression to the theory or ideas proposed (Jackson, 2011).

The Learning Development Guide (LDG) (Figure 2.) has multiple functions. It's primary use is as a directive for the kinds of teaching and learning sought for the course or module: it contains core information on the type, site, duration and mode of delivery, its cohort size, teaching hours, learning hours and allocation of those. The LDG introduces the course or module concept, relevant theoretical and methodological direction, and it communicates the characteristics of the learning – based on a co-created Creative Attributes Framework setting the graduate characteristics for the CFA project – which inform the potential teaching activities or exercises.

Using this LDG document as a guide within the staff recruitment package ensures that applicants can understand whether their course concept and their preferred teaching approach fits, which in turn makes the application/review process more efficient, thereby creating time for providing specific feedback and to identify staff/courses for future programming. Once recruited, this document becomes a resource for course design, and in combination with other elements in the Framework, this process of building a new course can be undertaken by staff within two weeks.

As a vehicle for tracking impact, value and transformation, the criteria contained within the LDG is applied across multiple activities in the Framework to create common data sets; the criteria informs direction within staff reflective processes and a student summative, self-evaluation activity, which are brought forward into the cumulative Discursive Evaluation activity where the staff team analyse and collaboratively synthesise impact and value of the course learning. From these activities, a new type of report is produced to evidence impact routes, directions of learning, moments-that-matter, values and themes emerging in teaching and learning. Holistically, these activities and products hold the power to influence institutional decisions on future programming, feed into Quality Assurance processes and validate future thinking.

FORETHOUGHT: Planning and Decision Making

Framework Element			
Learning Development Guide (LDG)			
Challenge Area			
<p>When there is opportunity to bring on new staff to develop and deliver new course/module content, Expressions of Interest (Eoi) are requested but often in response to a vague outline of the overarching module description. It is difficult to gather consistent responses, time-consuming to filter them, and difficult to provide constructive feedback to applicants. The turn-around from Eoi to delivery is lengthy and time-intensive for leads.</p>			
Aim			
<p>Create an effective, universal format for generating tailored Eoi responses that fit the needs of the programme, and module. The document should detail all necessary information so that applicants understand requirements and expectations e.g. hours available, delivery type, location, preferred methods, and direction for the content that is to be developed.</p>			
Stage of application	User	Type of Element	Functional Role
<p>Design of Teaching & Learning - for internal/external applicants to help guide their proposal for the project, course, module.</p>	<p>Staff applicants - staff team delivering learning</p>	<p>Guide document for staff</p>	<p>direction definition briefing</p>
Element description and rationale			
<p>In recruiting new staff to design and deliver content, the LDG provides a clear outline of the expectations from the teaching & learning, it sets both the conceptual direction and outlines the specifics of delivery. Successful applicants are able to draft a project/course outline in response to this document which will only require minor adjustment prior to the development of the teaching and learning. It is in effect, a brief for the brief, that new staff can work to and that can shape internal conversations about direction of particular modules, pathways or courses prior to anything commencing. During delivery the criteria in the LDG are used within the reflective and evaluation elements to create common data-sets.</p>			
Sample			

Fig 2. Learning Development Guide

Integrating and Applying

The Typology of Teaching and Learning Models, and the Delivery Model elements in the Framework are inextricably linked: the type of module for a particular mode of learning acts as the structure for housing the course model, designed for delivery, by the staff team. In the pilot phase the courses are delivered as a remote/hybrid studio experience. Teaching and learning occurs in what can be considered a dissonant space, where cognitive glitches and cognitive estrangement create a fictional place which is familiar but not quite real (Martin, 2022).

In combination, these two Framework elements inform a new approach to the design and delivery of learning that actively challenges the two standardised, creative Higher Education formats of *long and skinny*, or *short and fat* module types. These elements construct an autoethnographic opportunity for staff-owned, pedagogical knowledge to be re-viewed when channelled into different, flexible, course delivery vessels. Creating a significant, positive support for new staff, or staff joining from industry with professional knowledge, the elements become theory-led tools to shape existing expertise into an academic programme of learning. In application, these elements build the capability for multiple modules to run with a universal journey and route, whilst tackling diverse content directions; this common journey enables module cross-over points to be identified easily, commoned workshops, lectures or team-teaching moments can be scheduled and learner movement becomes more viable.

Typology Model

The variants of the Typology Model (Figure 3.) are influenced by staging and performance, the structure of a theatre informs the design of the models, in relation to the type of learning undertaken. For example, a short, summer module is designed as a balcony model: overlooking broader, longer-term learning journeys it takes in a specific focus, delivered at a more intensive level for a professional, life-long learner. A module for broad learning, with a longer, gradual learning journey, such as a Framing module, aims to outline knowledge around an area so that the participant can build their own stage for future knowledge.

In considering the teaching and learning site as dissonant, the opportunity for the delivery to create intrigue, concern and tension leads it to grow into a structure that demands the attention of its audience (ibid), “in Critical Design, as in contemporary art, disturbance is usually an opening into critical reflection rather than into studying the routine activities of everyday life” (Koskinen et al., 2011). Not only is this a positive agenda for the staff teams, but for the learner. The everyday routine of teaching is often built upon abstractions from professional experience and peer observation which amounts to what educator and theorist Mathew N. Powers (2017) describes as “...a pedagogy of accumulated beliefs, conceptions, and assumptions about learning that strongly shapes teaching and decision-making even though educators may not fully understand why and how”. What might be termed *Folk Pedagogy*, responds to local cultures of teaching and learning and inevitably conforms to a communally established definition of teaching, learning, and learning expectations. This culture of *folk knowledge* within institutions is difficult to counter and directly influences the ability for teaching, and learning, to change to meet external needs.

Delivery Model

Influenced by the Kaos Pilots *Learning Arches* method (Kavanagh, 2019) the Delivery Model (Figure 4.) creates a staged sequence of scenes for teaching and learning to move through; it includes an alignment session, moments to reflect, a script-reset step and integrates Thomas Kvan’s (2001) variation on Problem Based Learning (Koschmann, 1984) as the underpinning rationale for the model. The Structural element (shown in the sample in Figure 4.) accompanying the Delivery Model, provides a guide for how this staging might be delivered, a rationale for activating the steps, methods and possible scenarios where these could be used.

ACTION/PERFORMANCE: Integrating and Applying

Framework Element
Typology of Teaching & Learning Models

Challenge Area
Existing staff follow known 'models' for designing and delivering learning, which makes it difficult for them to open up their own processes to new types of learning, skills, or knowledge requirements, and to adapt to new requirements of learners. New short-contract staff may not have the experience or confidence to shape learning delivery to fit requirements of the programme or school, and need a template to guide their thinking for developing the learning.
Aim
Creating a structure for the design and delivery to follow that encourages staff to re-think how a programme of learning might be shaped, which opens the module up to greater, and more relevant, learning possibility.

Stage of application	User	Type of Element	Functional Role
Design of Teaching & Learning - internal, prior to staff recruitment or placement and development of teaching & learning	Staff - Academic Lead/Programme Lead	Model/Structure	direction communication action

Element description and rationale
Developing a module typology, holistically, is critical to shaping both the learning and the learner. It has the potential to positively influence the teaching mindset of staff designing and delivering learning, thereby creating an opportunity for change, for experimentation and risk taking within the structures.
This is a set of models for different forms of learning e.g. lectures, making/production, facilitated workshops, studio, etc. that use a range delivery structures - sequential, sessional, intensive, interval - alongside distinctions for on-site, remote, hybrid, mixed-reality modes of delivery. These forms and modes expand on the established, standardised types of delivery for UG and PG creative learning.

Sample

Einstein on the Beach, Philip Glass and Robert Wilson, 1975

Modules are informed by performance and theatre production.

1. The Tuning Module
2. The Mezzanine Module
3. The Framing Module
4. The Balcony Module
5. The Box Module

Romanian Pavilion, Venice Biennale, 2010

Fig 3. Module Typology

ACTION/PERFORMANCE: Integrating and Applying

Framework Element
Delivery Model and Structure

Challenge Area

New staff have a range of experience, range of pedagogical styles/approaches and the delivery of learning can vary wildly in standard and technique which leads to increased support/monitoring/trouble-shooting as well as disparity of learner experience, and lack of parity across courses delivered under a module, and across the trimesters or years.

Aim

To create a structure and model for a wide range of content and staff which can be applied to the courses or projects they wish to develop within a module. The model should offer enough flexibility for different types of learning and directions, and feel open to adaptation and interpretation yet retain a sense of common structure.

Stage of application	User	Type of Element	Functional Role
Design of Teaching & Learning Activity & Delivery	Staff team	Model Process	direction guide knowledge transfer

Element description and rationale

Applying the Typology of teaching & learning models, courses utilise the Framing model to help to re-imagine current 12 week, 'long and skinny' module spaces that would ordinarily run one day per week in Undergraduate level, Studio+ pathways. The learner undertakes 2 other modules/projects alongside this Framing Module.

Taking the Kaos Pilots 'Learning Arches' as a start-point for creating the model, different learning blocks build up across the 12 weeks - these are informed by a delivery structure that contains suggestions for what those blocks might look like, what might happen in them, methods or techniques that could be used etc. Staff are able to interpret the model and structure to suit their learning concept, but it ensures some commonality and synchronicity of learning experience across multiple courses running simultaneously, and between the trimesters as learners progress. Critically, it shapes the structure of delivery, not the content of the subject.

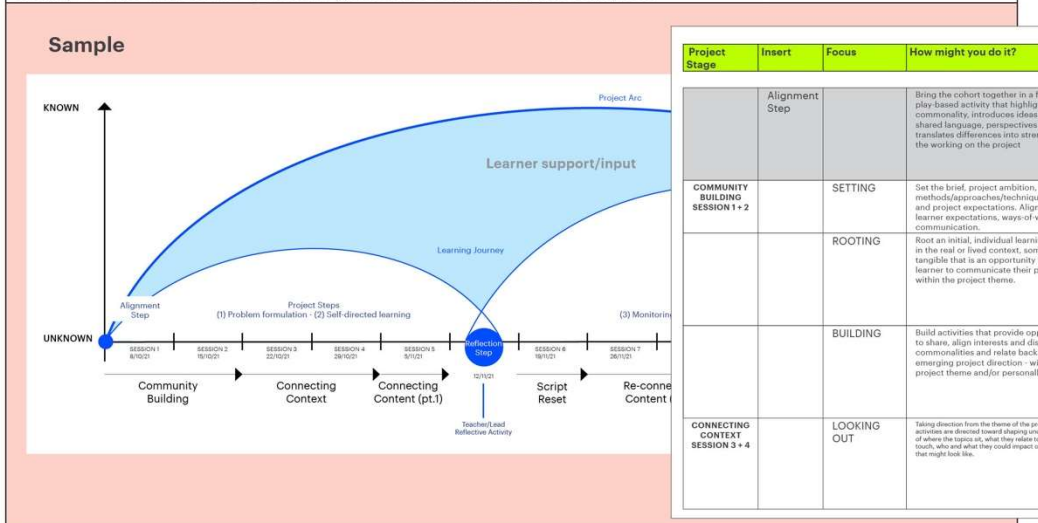


Fig 4. Delivery Model

Thinking, Comparing and Attributing

A reflexive model of designing is premised on understanding design as an inherently social activity embedded into, and mediated by, the situation it arises from and aims to change. Designing therefore, from this perspective, is not just an intellectual process, but a process embedded in and shaped by the world. To meet future needs, design educational models will require the elemental processes of *knowing-in-action*, *reflection-in-action* and *reflection-on-action* (Schön, 1987) in their pedagogical construction. Applied to the signature pedagogy of the Design School, including reflexive approaches across the pedagogical model could support the visualisation of a future through the liberation of individual and collective knowledge that Berardi (2017) calls for.

Reflexive Design assumes that neither the problem nor the possible solutions are given, but are actually created in the process of designing. Therefore, at a programme and modular level, the processes of teaching and learning engage with the development of strategic systems that utilise reflection actively, within the experience. This requires aspects of the curriculum to bring in personal experience and perspective to understand an individual's positioning (Goldschmidt 1977) within that pedagogical narrative. As such, the process of practicing reflexive teaching and learning becomes a self-ethnographic exercise (Hayano, 1979): in performance, it facilitates the knowledge needed to study its own culture of teaching and learning.

A Participatory Evaluation System

The CFP Framework utilises a Participatory Evaluation System which includes a Reflection Re-action learner activity (Figure 5.), a weekly Reflective Self Evaluation staff activity (Figure 6.) and a participatory, cumulative Discursive Evaluation element (Figure 7.). Each of these elements employs criteria from the Learning Development Guide (LDG) to enable tracking, measuring and visualisation of the value and impact of the teaching and learning experience.

The Reflection Re-action activity (Figure 5.) is a summative survey of strategically sequenced questions that provide the learner with an opportunity to respond to their learning journey. Designed from the perspective of guiding learners to reflect, the format encourages connection between their experience and their future visions: it enables them to gain insight, for themselves, on how they've approached their own learning, how they have shaped the moments-that-matter or what they might do differently. Consideration is given to the language, phrasing and sequence of questions to ensure that it is a restorative experience at the conclusion of learning. It is specifically structured to focus on the individual, personal experience, not the work produced. Whilst included in the final submission, it is only viewed by a lead – the teaching team see anonymised, summarised responses after assessments are complete.

Aligned to the learner Reflection Re-action activity, the staff team are invited to complete a short, self-evaluation survey (Figure 6.) after each session they deliver. Some questions contain criteria from the LDG – also contained in the learner evaluation activity – which generates legibility, between the teaching perspective and learning experience, around key aspects of the module ambition. This fosters visibility through the real-time, generation of human data which encourages organisational sense-making whilst managing delivery. Equally, it facilitates responsive action to the teaching team needs. In bringing awareness to their practices of teaching this Framework element holds a space for regular, journal-style, self-reflection within busy schedules and inspires confidence in adapting directions or thinking for the following week of delivery as/when needed.

A synthesising element of the Participatory Evaluation System is the Discursive Evaluation (Figure 7.) activity. This is a facilitated session where the teaching team work with clustered themes and insights drawn from across the learner evaluations and weekly, staff reflections, which relate to key directions and criteria outlined in the LDG. In the activity staff build into statements to create pedagogical impact routes and stories. This is an opportunity to filter, refine and resolve observations about successful ways-of-working, issues or concerns that arise, and highlight techniques or approaches that work.

A subsequent reporting structure is designed to visualise and narrate the knowledge transferred through these reflective activities: considered as a teaching enhancement tool, it captures and communicates the delivery, learning and learner evaluation in a small, medium or large, scale approach. A Creative Futures Evaluation structure compliments the CFP Framework, and acts as a knowledge suitcase.

REFLECTION & MEANING-MAKING: thinking, comparing and attributing

Framework Element
Reflection Re-action - Learner Self-evaluation

v

Challenge Area
From a student perspective, reflexive practice can be seen as distinct from designing or making work, often there are few tools to enable them to learn how to be self-reflective, to self-evaluate and critically understand how, why and the ways that they work, for themselves.

Aim
To create an awareness and ownership in the learner of their own ways -of-working and how they've learned, To create an a concluding step in the designing process that specifically asks the learner to consider how they learned, the ways they went about that, what it led them to realised, how that informed their designing practice and how they might take it forward for themselves.

Stage of application	User	Type of Element	Functional Role
Learning Activity & Delivery Evaluation of the Learning	Learners - designed by Lead and issued by staff team for cohorts to complete	Activity	reflection evaluation

Element description and rationale

This activity uses a questionnaire - Google forms was used for this - which learners receive in the weeks prior to the course/module concluding to generate knowledge of the learning content and delivery. The form aligns to a mid-point reflective exercise set within the studio project, and walks learners through a series of questions that ask them to look deeper into how they have worked, how they feel about it, and what they might take forward from the learning experience. It explicitly does not ask them evaluative questions related to the work they've produced or undertaken, but follows a more holistic approach of sequentially helping them to understand their own ways-of-working for themselves. It is included as part of the final submission. From an institutional perspective it functions as a thermostat for delivery of the teaching and learning.

The questions in this form connected to the weekly reflection activity that staff undertook - which created clear understanding of perception of learning and the experience of learning.

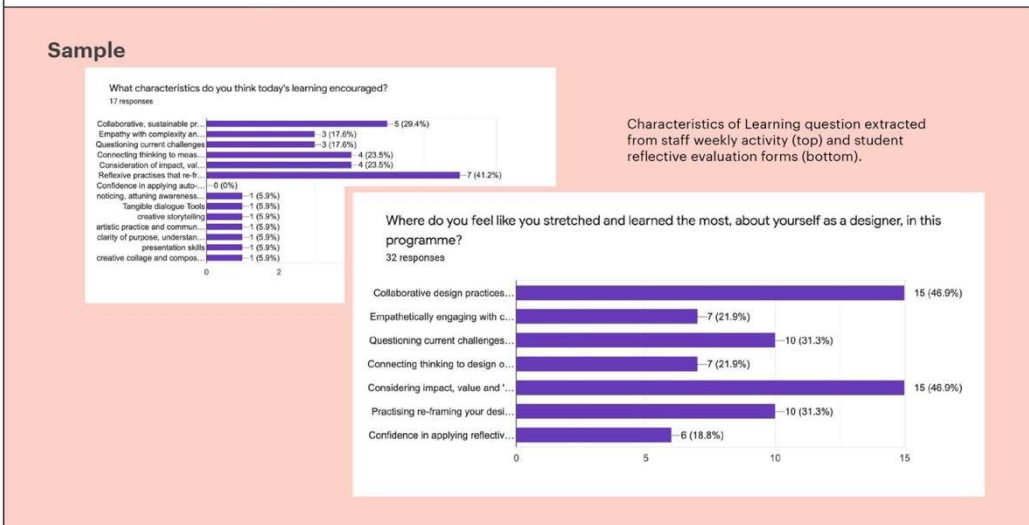


Fig 5. Reflection Re-action

REFLECTION & MEANING-MAKING: thinking, comparing and attributing

Framework Element			
Reflective Evaluation of Delivery and Learning - Weekly			

Challenge Area			
With multiple staff delivering new content simultaneously - and some doing it for the first time - particularly in remote/hybrid delivery mode, it is difficult to 'see' how the teaching & learning is progressing, to notice if/when there are problems, to know when a Lead might offer input or act to enhance their delivery experience.			
Aim			
To create visibility of the teaching and delivery experience in a way that feels positive, beneficial and healthy for the staff. To create a method for understanding the perspective of teaching alongside the experience of the learners learning - to move toward effective, human-centred insights and value indicators as a way to 'measure' impact and effectiveness.			
Stage of application	User	Type of Element	Functional Role
Evaluation of the Delivery Evaluation of the Learning	Staff team	Activity	reflection evaluation
Element description and rationale			
This activity uses a questionnaire as a format for a weekly, structured, journaling activity for staff to complete after each delivery session. The questions align to key aspects of the Learning Development Guide (LDG), and to questions in the student 'Reflection Re-action' activity, which enables themes to be identified. This creates common data sets and allows for greater analysis.			
Aligned to the approach taken with the student 'Reflection Reaction' activity, the series of questions build toward a sense of wellbeing, self-reflection, awareness of their own practice of teaching and provides an opportunity to identify [for themselves] what is working and what isn't, then adjust if needed. This activity creates a log of responses every week and allows visibility of the course without having to send emails, sit in on sessions or overtly manage. It is a live connection point to the delivery.			

Sample

Don't Look Now - CFA Thematics Pilot

1. Email

2. What question did you deliver today?

3. What 3 words might capture your pain?

4. How do you feel about the delivery and delivery and the overall learning experience of the staff?

5. What characteristics do you think today's learners have?

6. What opportunities did the learning activity provide for you?

7. What was of value in this session's learning experience?

8. What do you hope your learners took away from this session?

9. What learning are you taking forward from today's session?

What do you hope your learners took away from this session?

17 responses

Confidence in applying skills an...	5 (29.4%)
Empowered to be part of the ch...	4 (23.5%)
Practice in using design thinki...	5 (29.4%)
Embedded reflective learning a...	2 (11.8%)
investigative curiosity	1 (5.9%)
learning from each other	1 (5.9%)
storytelling as a method for co...	1 (5.9%)

What was of value in this session's learning experience?

17 responses

Collaboration	11.8%
Connectedness	15.8%
Storytelling	11.8%
Critical Thinking	11.8%
Challenging perceptions and problems	11.8%
Communicating design	11.8%
Design Research	11.8%
Uncertainty and risk	11.8%

Fig 6. Staff Reflective Evaluation

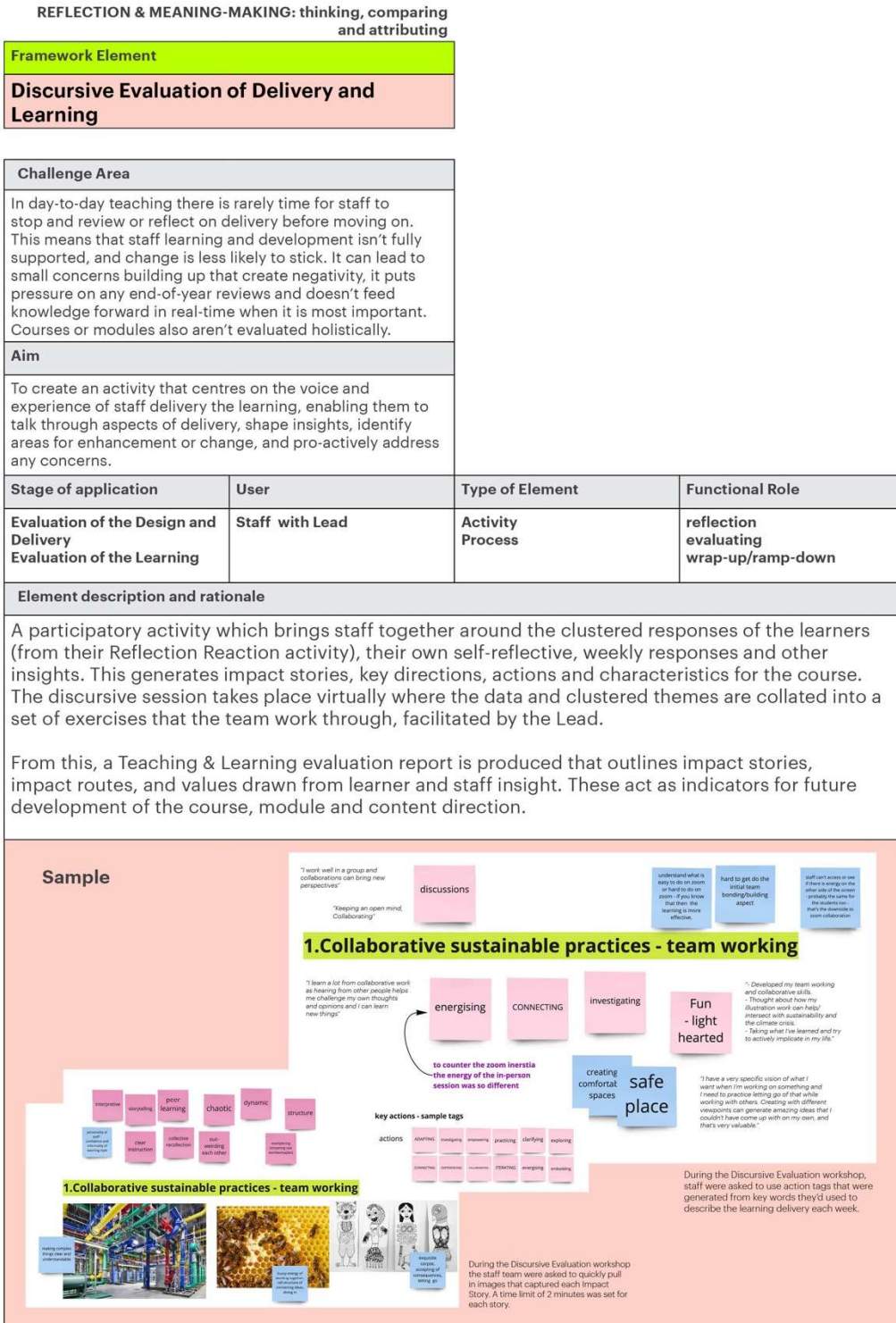


Fig 7. Discursive Evaluation

Making Sense

The Creative Futures Pedagogical Framework is an integrated and exposed architecture of connected structural elements. When combined, they build a holistic, adaptable structure (as mapped in Figure 1.) that docks to a wider institutional infrastructure.

The elements in the CFP Framework can be described as Sense-making tools, in that they support the process of designing teaching, the delivery of learning and define the unified reflection of this. Sense-making tools aim to reveal deeper understanding, and within the context of this body of research, understanding pertains to sharing or growing knowledge, together, across functions, in an open, participatory way. Across the Design and in activating its elements, the Framework intends to act on educational theorist Melanie Walker's (2006) positioning that radical thinking around the purposes and values of higher education, in relation to student development, agency, democracy and learning, are needed.

Whilst Sense-making ordinarily denotes individual tools that help make sense of information, in this research, it is proposed that the term is considered as describing a mechanism for shaping knowledge within complex problem spaces, such as design education. Sense-making is required at the start of any process to understand language, knowledge and perspectives of delivery. It is required throughout project-time (Huybrechts, 2014) to support the flow, the sharing and the application of knowledge across teams – it underpins the development of what could be described as *project way-finding*. Being able to make sense is required at the close of a project to develop a comprehensive understanding of learning, knowledge, and ways-of-working that might transfer to the next team and course/module.

A Future Curriculum for Change

In discussing the elements and roles they play in the delivery of teaching and learning, it is pertinent to consider that in the context of this action learning research, the CFP Framework is considered a prototype curriculum. Despite there being many variations of what the term curriculum means (Fraser and Bosanquet, 2006), here, following Edwards et al (2006), it is not grounded on the structure or context, but on the individuals' experience of it as "a lived curriculum, as experienced in the learning space(s)". Positioning the CFP Framework as curriculum design empowers it to reimagine a maligned area of design education research, and more significantly, future creative educational policy (Barnett and Coate, 2005)

In this paper, the Creative Futures Pedagogical Framework is discussed from the perspective of its potential for incubating comprehensive curriculum transformation, based on the idea of changing complex systems through cumulative activity, of moving quietly toward unfolding transformation (Thackara, 2015). Located in an anticipatory action learning space (Ramos, 2013), the Framework practices new approaches that create socially transformative situations (Gidley, 2017) for the institution, staff and learners, to engage in. It scaffolds the critical future of design learning by negotiating with the organisational systems in place for the generation of knowledge. In doing so, it evidences a strategic system intervention that allows the Design School to act on theorist Arturo Escobar's (2018) call for design to move out of its social and economic comfort zone, and embrace its role of transformation through situated, open-ended, socially oriented, participatory practice.

Conclusion - A Capable Architecture

In the introductory essay for *Beyond Speculative Design: Past-Present-Future* (Mitrović et al, 2021) the authors credit the work of science-fiction writer, Ursula K. Le Guin (1929-2018) as moving that genre into unparalleled categories of experimental thinking that allowed exploration of different lives, worlds and ways of being. Extolling the importance of different imaginaries, Mitrović et al see design fiction and imaginative fiction as providing the opportunity to map out different futures and ways-of-being.

Inspired by the Centre Pompidou (1977), this Framework is a speculative visualisation of how *Futures as Design* might build. It constructs an exposed, responsive curriculum for a new future, one entangled with current institutional infrastructures and thinking. The Creative Futures Pedagogical Framework has the potential to facilitate a space (brown, 2021) for framing pedagogical change that affects more than the content of the learning, that begins to explore an infrastructure for re-imagining the knowledge experience. Following theorist John Stephenson (1998),

this Design does that through enhancing capability, embodying the concept that capability is the “integration of knowledge, skills, personal qualities and understanding used appropriately and effectively – not just in familiar and highly focused specialist contexts but in response to new and changing circumstances”. If capability is understood as holding the power and ability to do something, to perform a certain functional role, then a system that is capable and fosters capability in participants is one that will enable different ‘being’ and ‘doing’ (Sen, 1992). Educator David Garwin (1993) suggests that learning is the key to organisational success, that knowledge should be continuously enriched through both internal and external learning, “for this to happen, it is necessary to support and enliven [the] organisation, people, knowledge, and technology for learning”.

For the Creative Futures Pedagogical Framework to become a sustaining (Fry, 1999) strategic intervention in the system, to enhance teaching and transform the creative curriculum, it must emancipate the future story, by design. It must, as theorist Joseph Voros (2003) suggests, help us to ask ourselves what we might need to do, and then enable us to develop the responses. As with Rogers and Piano’s intervention, the Framework attempts to engage the city around it, whilst simultaneously challenging its environment and empowering inhabitants to move differently, to shape alternative viewpoints in a familiar setting. Building a porous architecture that opens up and interrupts dialogues to create different perspectives on the landscape, enables the organisations, but also staff and learners, to become capable of living in their future (Bishop and Strong, 2010).

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