

Visual Action Methods in the Research Process, Using

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Abstract: Human-centred, participatory and co-design approaches to designing often involve working in collaborative, interdisciplinary contexts. In such situations promoting collegial open environments and methods of engagement to bring forward and capture the ideas, opinions and perspectives of the participants for discussion is paramount. Visual action methods provide appropriate ways of promoting such environments, eliciting information, promoting discussion and facilitating consensus within group situations. These methods provide ways for gaining deeper understandings of the research situation that are appropriate to practice and research. Visual action research requires the design and development of tools and models of engagement that are suitable for capturing the voice of the stakeholders as both qualitative and quantitative information in the form of generative dialogues and visual artifacts. The co-creation of these rich pictures allows for disparate interdisciplinary groups to develop shared understandings. The picture holds the context and highlights the issues for discussion and development. This paper discusses participatory and co-design approaches as appropriate methods for developing design briefs for learning environments in higher education. These methods of research and design engagement are being used for the purpose of an Australian Learning and Teaching Council Priority Project – A protocol for developing curriculum-led human-centred next generation learning environments in higher education. The study is drawing together theories and research from social design, appreciative enquiry, positive psychology, cultural theory to inform participatory design processes and bespoke tools that scaffold stakeholders in these engagements. The processes and bespoke tools endeavor to address the complex relations of people, 'things', learning and space.

Keywords: Socio-political Constructions, Socio-spatial Constructions, Action Research, Participatory Design, Co-design, Play, Games, Ludic Space, Sensemaking

Introduction

THE CONTEXT OF higher education is complex. This complexity is exacerbated by the changing paradigms within teaching and learning driven by new learning theory and the affordances of new technologies. These shifts require new approaches to the design of learning spaces that in turn suggests new approaches to the development of design briefs for next generation learning environments. Developing design briefs for next generation learning environments involves working with multiple stakeholders, representing a chorus of individuals, with competing needs and different perspectives. These groups are often diverse and stratified, 'independent people,' minding their territory, so there is something paradoxical about trying to get such groups to 'achieve things together' (Mowles, 2010). Within such groups, as part of a social process of sensemaking and identity creation, interactions, power plays, gestures and emotions are used to reaffirm or reshape self, to establish meaning and authority. In these discursive processes the power of language is supreme.

For collaborative group processes to be meaningful these social processes and the power of language need to be disrupted to give a voice to all and take participants out of their familiar contexts to responsively co-envisage alternate possibilities that represent promising change.

When working collaboratively with such stakeholder groups the brief development can be conceived of as a complex responsive process of relating and as such suggests methods that have a tendency toward a shared 'restatement' or 'reframing' of the situation or the 'design space', that can be co-created by designers and stakeholders (Mowles et al, 2010; Kolki, 2010). Through conceiving brief development as a recursive and responsive process, a more sustained and confident engagement by stakeholders is enabled and an enquiry based environment is created, supportive of 'reflection, research, investigation' and play as co-creation activities (Mowles et al, 2010). Participatory design and co-design offer frameworks for these processes supported by an emerging range of bespoke tools and games that allow stakeholders to step out of their daily lives and inhabit ludic space to envision alternate futures. Through play, open, collegial, and imaginative interaction is enabled disrupting automated or defensive responses, shifting the focus of participants from 'problem' to 'possibilities'. The ludic space of play draws stakeholders in to as if worlds, where tools and triggers can elicit ideas, values and feelings generating dialogues and creating visual narratives and artifacts.

Through the frameworks of participatory design and co-design and the use of visual tools, the iterative process of design brief development takes on a visual action research frame to draw forth what is salient, what should change and how to move forward. In order for this change to be meaningful, to the higher education context, the brief needs to be co-created through envisioning, the development of shared understandings and aspirations for the future, that specifically draw on what is central to the relationships between learning and space.

The Context of Higher Education

When developing design briefs for higher education we are operating in an interdisciplinary context that represents a complex system of multiple conceptions of politics, history, economics, business, psychology, human geography, education, learning and environment. This represents a dynamic and open-ended system that is experiencing massive change.

Currently when designing new learning environments in higher education designers are entering into a changing paradigm where approaches to learning are calling for new spatial responses, however, the relationships between learning and space are under theorized and not clearly understood. In architectural terms campuses and their buildings have often been considered primarily in terms of their outward appearance as expressions of the university and the educational experience with little to no consideration of how to translate these into interiors with the atmosphere and affordances needed for experiential engagement (Zimring et al, 1987; Gifford on Gibson, 2002). Gibson maintains that affordances are central to the immediate perception of environments, that is, substances, surfaces and layout and their affordances, and the activities they might support. Affordances, to Gifford, are more important as a primary consideration for environmental perception over and above the more traditional and art based concepts of colour, form and shape (Gifford 2002). Consideration of how the user will experience a space, their perceptions, expectations, and needs, is essential in creating a 'person-environment fit' (Zimring et al, 1987).

Considering users in learning contexts is not new and in the context of learning theory is central. As early as the 1960's students came to the centre of attention in relation to the design of universities through their protests regarding 'a lack of fit regarding their needs as students' which was seen to 'produce considerable alienation' (Zimring et al, 1987; Carpman et al, 1987). Of course students are not the only stakeholders in educational settings. Teachers, researchers, facilities managers, managers, administrators, technicians, cleaners, external partners, parents and community, to name a few, all form part of the stakeholder group. Add to this mix multidisciplinary teams of designers and consultants and the stakeholder groups are distinctly both broad and stratified. Such diverse stakeholder groups represent complex challenges which are amplified by the need for these groups to become engaged in what essentially is a change process of some form or another – changing curriculum, teaching and learning approaches, technology, space and so on.

Currently higher education is experiencing major shifts in focus from passive instruction based learning to active enquiry based collaborative learning supported by integrated technology. These shifts require designers and stakeholders to rethink and re-conceive of learning environments in new ways, to envisage change. The brief development process, then, in order for change to take place, needs to adopt frameworks that are participatory, inclusive and appreciative and that support change through the co-creation by stakeholders of shared visions of their future. This requires methods that interrupt normative, habitual patterns of thinking, responding, defending and posturing to arrive at new possibilities.

Theories and Methods – Getting the Right Focus

Drawing on social science and design research there are an array of theories and methods that can inform and support the consultation and brief development process in design. What follows is a brief overview of a number of theories and methods that are particularly pertinent to the contexts of 'change' and diverse stakeholder groups such as those found in higher education settings.

Participatory Design, Co-design, Social Design and Appreciative Enquiry are relational processes that draw on what stakeholders bring to the situation and use methods to develop a positive and affirming change or envisioning process. They share with action research an inclusive and iterative process. They represent 'complex responsive processes of relating' through the reciprocity of co-creation (Mowles et al, 2010).

Appreciative Inquiry

Appreciative inquiry, conceived of by David Cooper-Rider in the early 90's, put simply is a positive change process built through inclusive and appreciative consultation. Just as co-design and participatory design recognize and value the voice of the 'end users', the stakeholders, so too appreciative inquiry recognizes and values the voice of the 'people', the participants or stakeholders. It is not simply the voice, letting them have their say, but a true appreciation of what people can offer to the processes of design and change. Appreciative enquiry as a framework affords positive and enabling ways of envisaging change, rather than a more typical problem focused approach. It draws on the inner strengths, dreams, visions, hopes, culture and stories of a community to envision and fuel transformational change in positive ways through co-creation (Whitney & Bloom, 2010).

As a change process Appreciative Inquiry is founded on the following beliefs;

- *People individually and collectively have unique gifts, skills, and contributions to bring to life.*
- *Organizations are human social systems, sources of unlimited relational capacity, created and lived in language. The images we hold of the future are socially created and, once articulated, serve to guide the individual and collective actions.*
- *Through human communication – enquiry and dialogue – people can shift their attention and action away from problem analysis to lift up worthy ideals and productive possibilities for the future (Whitney & Bloom, 2010 pp.1)*

The process of Appreciative Inquiry has four stages that can be described briefly as follows:

Dream – what are the long-term dreams and aspirations

Discovery – what is going on that is good and of value

Design – how can the collective dreams be brought to life

Delivery – how might the design be implemented, monitored and reviewed

(Whitney & Bloom, 2010)

The principles of appreciative inquiry and the four-step process provide a basic framework for the inquiry cycle in design brief development. Each stage of the cycle informs the design of protocols and tools to support the inquiry process.

Appreciative inquiry draws on theories of positive psychology as demonstrated in the work of Seligman and Csikszentmihalyi.

‘The field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present). At the individual level, it is about positive individual traits: the capacity for love and vocation, courage, interpersonal skills, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent and wisdom. At the group level, it is about the civic virtues and the institutions that move individuals toward better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic’

(Seligman & Csikszentmihalyi, 2000 pp.5).

Appreciative Inquiry, through positive psychology (Passmore & Hain, 2005), brings a process of development into focus, with ‘the glass half full’ as the starting premise, a transformative vision led process is facilitated through generative thinking giving rise to a shared energy for and co-construction of new trajectories and possibilities. The process facilitates learning about self, about others and about different futures. Through the social construction of new possibilities change can be created and owned by the stakeholders generating positive engagement with the new outcomes and future realities that are derived from the process (Whitney & Bloom, 2010, Passmore & Hain, 2005). These same principles are central to participatory and co-design processes.

Participatory Design and Co-design

'Quality environments are responsive to human needs, values, and aspirations. Successful designs and healthy environments are inclusive and embrace multidimensional goals; they support the particular needs of a user; they respect and reflect the values and traditions of user populations; and they include stakeholders (people most impacted) in design decision making processes' (Windley & McClure, 2007).

Both participatory design and co-design approaches arose in response 'to modernist design, which was very directive about how people should work and live' (Windley & McClure, 2007). These processes are in essence embracing what has been termed by others as 'Social Design' into the role of the designer. That is to say designers need to consider how the design 'benefits the people who live or work in a building, or even visit it, by incorporating their needs and ideas into the building' and advocating as many design considerations that benefit users as possible (Gifford on Sommer, 2001).

The need for participatory and collaborative processes has also arisen out of the needs of organizations and communities to consult both internally and externally across and between diverse groups of people; diverse in terms of their experience, competencies, interests, responsibilities, professional language, opinion, preferences, values, and so on. For designers to work in these participatory ways signals that designers also need to develop appropriate tools and techniques that enable collaboration and build trust within diverse stakeholder groups (Brandt, 2006). As part of participatory and co-design practices the concepts of generative tools, playful triggers, and design games have been developed as frameworks for structuring generative dialogues, sketching or collaging, visual collaborative story telling and the creation of visual artifacts (Sanders, 2000; Brandt et al, 2008; Johansson, 2006; Loi & Burrows, 2006; Loi, 2007).

The use of these processes and tools within design has predominantly been in the areas of product and service design with few examples in spatial projects and even fewer in the context of higher education. In the context of our project this called for the development of generative tools specific to drawing forth what is salient to higher education projects in order to scaffold the co-creation of meaningful design briefs.

Co- Creations of Design Briefs (Through Visual Dialogue)

'Conventionally a design begins with a brief, which we may imagine a designer is given by a client. However, since design problems cannot be comprehensively stated this begs the question of what is in the brief and what is not! This itself can vary considerably.' (Lawson, 2003: pp.186)

Developing design briefs can be viewed as a process or protocol that is simultaneously educational and solution (possibility) seeking. Essentially the aim of a design brief is to highlight what is critical or most significant in gaining an understanding of what is needed and how to progress (Lawson, 2006). Developing briefs involves a change process within which the shifts may vary from incremental to innovative or transformational and involve not only the change of the physical environment but also changes to understandings, practices, affectations, identities, attachments, motivations and cultures.

Design briefs in their first iteration rarely represent something that designers can ‘start working on’. The best initial briefs, according to some leading designers, can be captured in ‘a few sentences’ or ‘a mission statement’, or ‘one or two pages’ at most (Lawson, 2003: p.187). Through empirical and anecdotal research Lawson concluded that in the early stages of the design process what is important is the big picture, a ‘central idea’, a vision, a dream. Brief development then needs to move from what is at play, ‘analysis through synthesis’, (Lawson, 2003) to more detailed understandings.

Brief development is typically iterative and moves through a series of framing and reframing processes with each iteration moving closer toward a common view of how the design is to progress. In the case of briefs for new spatial engagements in higher education the dialogue for reframing is complex and often requires reframing within the stakeholder group to facilitate the change process. So rather than the brief development starting as a dialogue between the designer and the client the process needs to start with a reframing dialogue between stakeholders (Kolko 2010).

During the briefing process clients are often problem oriented or focused on project specifics that can disable opportunities for change and innovation. This fixation on the problem is made more complex in diverse and stratified stakeholder groups due to their complexity and the existence of factions and coalitions (Lawson 2006, Kolko 2010). Traditionally the discursive practices of brief development (Lawson, 2003) have had the potential to limit the possibilities for interrupting predictable responses, thus limiting the richness of what might be revealed or drawn forth. Discursive practices are also limited by their awkwardness, their social and political contexts and participant biases. This limits further the potential for reframing, for future orientation and alternate possibilities.

Due to the shifting paradigms within the higher education sector, when developing design briefs for learning environments, there is a need for the process to be future-oriented, participatory and collaborative to promote discovery of what might be. This presents the need for ways to collaborate across diverse stakeholder groups, to give a voice to many and to elicit thoughts, feelings and ideas to co-create possible futures that can inform the design process. As previously related, participatory design and co-design represent ways that enable such collaborative processes and emerging out of these practices is a ‘landscape of generative tools’ that is ‘predominantly visual in nature’ (Sanders, 2000). The introduction of a non verbal semiotic language through the use of such things as images, sketches, pictograms and the like, allows spoken language to be ‘set aside’ momentarily (Meier, 2007; Brandt et al, 2008) and allows ordinary laws or relations to be suspended (Harper, 2002; Latham, 2003).

The use of visuals or images as triggers or conversation pieces is not new. Anthropologists, social scientists and psychologists have been using images in their fields for their potency to draw forth memories and emotions and their capacity to record events or scenes in their entirety (Harper, 2002; Hurworth, 2003; Styhre & Gluch, 2009). Visual representations, through ‘visual perception’, are ‘simultaneously perceived’ (Styhre & Gluch, 2009 referencing Vygotsky 1978); that is to say vision as an embodied intelligence connects the multiplicity of human experience without the linear or analytical distraction of language (Styhre & Gluch, 2009) or its socio-political power (Meier, 2007). Images, drawings and photos can be conceived of as non-verbal probes. The claims across the literature are consistent, images elicit feelings, draw forth thoughts and beliefs, provide triggers for projecting alternate futures through the ascribing of meaning onto the image (Robinson & Parman, 2010).

When participants communicate through a visual language, their socio-political status shifts and they are afforded a shared voice. The use of visual language enables and supports disparate groups to speak a common language (Sherringham & Serle, 2010). With the power play of spoken language diminished and through the co-generation of shared knowledge and understandings, trust is established (Meier, 2007). By working in abstract, visual and playful ways the designer can facilitate a reframing of the situation assisting the client to begin to think anew and to frame future oriented ideas.

Whilst the concept of reframing in design is not new, the tools and methods developed in this project are relatively new to design, particularly spatial design.

Using images, games and playful triggers enables stakeholders to play in what Schön calls 'as if' or 'design worlds' where they can envision future scenarios through explorative dialogues and the creation of interpretable visual artifacts (Schön, 1995; Brandt & Messeter, 2004; Loi, 2006). These tools take advantage of the visual ways we have of sensing, remembering and expressing ideas (Sanders, 2000; Johansson, 2006). Through tools that promote exploratory engagements, preconceptions can be set aside and a generative and richer dialogue, concerning possibilities and desired outcomes, achieved.

Game Play and Design Games

'The cultural historian, Huzinga (1950) contends that from the very beginning, cultures evolved in forms of play. The instinct of play pervades all human endeavors: in law, science, war, philosophy, and in the arts. Through the eyes of Huizinga, humans emerge not as Homo sapiens, the man who knows, but primarily as Homo Ludens, the man who plays'. (Kolb, 2010:p26)

It has long been recognized that as humans we are ludic creatures and that play allows us to learn outside our normal settings (Kolb 2010). In the same way as ludic activities and play afford us space for 'being' outside of our normal settings, games allow for participants to engage in such things as ideas, challenges, strategies, and skills in imagined futures and, through identity play, to engage in imagined roles; games afford participants a degree of free movement within a more rigid structure (Salen & Zimmerman, 2004; Ibarra & Petreglieri, 2010).

When developing briefs in higher education the stakeholders groups represent a complex array of perspectives, needs and aspirations that are often at odds with each other. Creating a 'social play' space allows participants to 'freely engage in play and not an aggressive fight' (Kolb 2010:31). Free from 'socially normative structures' in a world decolonized of familiar ways of speaking of what is wanted, participants are able to 'play' with ideas in a creative process (Kolb, 2010; Inayatullah, 2010). This creative process allows stakeholders to make design moves, framing and reframing perspectives. Play moves from epistemic (serious, focused, analytical), to ludic, (spontaneously playful), play and back as in the design process. This play space begins to resemble what Kolb introduces as a 'ludic learning space' (Kolb 2010) where stakeholders and designers can learn what is salient, what is central to them, to their colleagues and to the learning space project.

Design Games and generative tools facilitate participatory ways for stakeholders to engage in play where alternate identities and futures can be imagined through the co-generation of visual narratives, personas and meaning (Johansson & Linde, 2005; Johansson, 2006). Within

play, past legitimacies and structures are subverted creating space for the social construction of future realities (Brandt et al 2008) Through these collaborative engagements meaning arises through the 'intertwining of different voices' leading to the shaping of artifacts and shared understandings (Johansson & Linde, 2005). For our project meaning needed to arise out of the development of shared understandings around the relational issues of curriculum, authentic learning, space and affordances such as technology. This required the development of new processes, bespoke tools and games.

The Tools and the Game

'The games "take advantage of the visual ways we have of sensing, remembering and expressing. The tools give access and expression to the emotional side of experience and acknowledge the subjective perspective"' (Sanders, 2000).' (Johansson, 2006)

In response to the identified need to develop participatory and co-design approaches for developing meaningful design briefs for next generation learning environments a series of bespoke tools and models of engagement are being developed to facilitate collaborative engagements. These include a set of visual cue cards, a set of persona development cards, a game, a series of lens cards and scenario tools. The 'tools' enable the development of 'explorative design dialogues' and act as 'communication devices' (Brandt et al, 2008; Loi & Burrows, 2006) enabling stakeholders to 'create artifacts that express their 'thoughts, feelings, and / or ideas' (Sanders 2000 in Johansson 2006) for new learning spaces in higher education.

The tools are drawing on a number of theories to inform their design. Firstly learning theory, in particular authentic learning, situated learning and experiential learning (Herrington & Herrington 2006, Herrington & Oliver 2000, Lave & Wenger 1999, Kolb & Kolb 2010) to interrogate relationships between the 'elements': curriculum, space, culture, values, attributes, needs, desires, activities, affordances, support technology and facilities, boundary conditions, aesthetics and atmospherics. Secondly Cultural Theories and in particular Social Practices within which Practice Theory is seen as a frame for informing inquiry into the relationships between space and learning; body, mind, things, knowledge, discourse, language, and process as embodied elements of practice and learning (Reckwitz, 2002). The tools are mobilized in iterative and cascading workshops that move from the abstract, such as dreams, values, culture, to the concrete, such as activities, affordances, and needs.

The Visual Cue Cards

The visual cue cards use images and pictograms as visual metaphors or analogies for the 'elements' and as such can represent many things to different people and enable new perspectives to be taken up. They were conceived of around seven groupings; culture, technology and tools, learning approaches, interactions, layout, aesthetics and the sensory. The cards are curated for each stakeholder engagement and are used to generate dialogue around a series of specific questions. The images have the capacity to 'awaken us from our stock responses' (Eisner, 1995: 2 in Loi & Burrows, 2006). In drawing forth meaning around the images a conceptual framing occurs - the process allows stakeholders to talk in abstract ways about their aspirations for the project and to see different possibilities. Through an exploration

of the situation through contextual engagement and appreciative enquiry, stakeholders' and designers' views and understandings can shift (Johansson & Linde, 2005).

The Persona Cards

Personas can range from a hypothetical caricature to an in depth profile based on detailed data. However, in our project what was needed was not a static profile but rather a way of seeing the personal transitions and support that were needed and what might impede such change. These cards allow for the quick development of a number of stakeholder personas that are then fleshed out to create a rich and empathetic profile inclusive of aspirations, motivations and impediments. The process develops empathy and deeper understandings and insights into user needs and what might enable or disable user engagement. The stakeholders then take stewardship of these personas and represent their voice in the game. This process can also be used to enable stakeholders to engage in 'identity play' where they can imagine themselves as someone different in the future (Huzinga, 1950). Ibarra and Petreglieri propose 'identity play' as 'a way of believing in a possibility and behaving as is if it exists' in a provisional trial of future selves or future others (Ibarra & Petreglieri, 2010:p10)

The Game

As a working title the game has been called 'The Parallel Universe (ity)' setting a playful tone and pointing to 'as if' worlds. As a model the game can be played and interpreted in many ways producing a number of research artifacts that are representational of the stakeholders views and engagements with the future oriented learning scenario. As a model the game can be contextualized to a given design situation. Framing the game through different lenses and questions creates a specific focus. The game brings together three of the tools being developed; the visual cue cards, the persona tool and the activity tool. The game is played in a form of cascading workshop with the intention of assisting stakeholders to express and bring into view what is salient on multiple levels ranging from cultural values to enabling activities and practices.

The sequencing of the game involves similar phases to appreciative inquiry Taking the participants through various activities that serve to 'set the scene' through discovery, 'explore futures' through dreaming, 'designing' through mapping and 'checking' through detailed consideration. The phases of the game draw on appreciative inquiry, what matters to the stakeholders; positive psychology, citizenship and tolerance; futuring, imagining what could be; and activity theory and practice theory, in terms of understanding the activity of learning. Through visual narrative the game brings the future to life.



Fig: An Example of the Parallel Universe (ity) Game Played Out

Through a series of questions stakeholders must negotiate the selection of images that best represent their collective responses. From image decks, curated around the questions, participants must choose a set number of cards. As participants put forward different cards and discuss what meaning they ascribe to the image generative dialogues unfold. The process *'mind maps'* the group's collective thinking around their objectives with the selected images and words capturing the group's discussion on the game board.

The game forms an abstract setting that sits outside participants' normal frames of reference. The generative processes of the game create rich visual artifacts that are interpretable (Sanders, 2000; Loi & Burrows, 2006). Just as designers use drawings to create 'conversations' with themselves and others the artifacts operate in similar ways to sketches providing conversation pieces that speak to the participants and in turn to others. The game, therefore, creates a process through which non-designers can conceptualize the socio-spatial and socio-behavioural relationships at play and contribute to the reframing of the situation. The tools and the game, therefore, provide 'things-to-think-with' and start to enable participants to actively engage in the design process by giving them ways of talking back and 'expressing design moves' in a similar way that sketches do for designers (Brandt & Messeter, 2004).

Scenarios

As an 'end game' the insights and empathy gained through the cascade or cycles of enquiry inform the development of future scenarios, activity vignettes or day in the life scenarios. This activity is a teasing out, a visual narration and testing of what is presently a fictional

representation of possible futures envisioned by the stakeholders. These possible futures inform what needs to be considered, from the pragmatic to the aesthetic, from the institutional to the personal, ‘the fragments’ and ‘frayed edges’, and how these may be enabled through the design process (Kemp, 2001).



Fig. Scenario Development in Progress

Each engagement with the stakeholder group represents a rich tapestry of generative dialogue, visual narrative and ideas capturing multiple points of view and the creation of interpretable artifacts (Loi & Burrows, 2006).

Quantitative and Qualitative Capture – methods / Interpretation

‘A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.’
(Salen & Zimmerman, 2004)

Through game play participants systematically discuss opinions, develop shared understandings and negotiate consensus through artificial conflict. These are captured through the selection of images, words associated with images, the dialogue generated around selections and decisions, both visual and verbal, and the meaning developed through the creation of narratives describing scenarios in response to what if worlds. These ‘captures’ represent interpretable and quantifiable outcomes.

Within each workshop setting the groups’ responses are recorded through photography, video and digital voice recording. These are then compared across the groups in the workshop

to identify identical or similar responses, disparate responses and patterns. If multiple workshops are held then the results from different workshops are also compared.

The method achieves validity through this cyclical procedure of critique, challenge, reassessment and refinement in the dialectic of multiple information sources and perspectives (Dick & Swepson, 1994). From these comparative cycles patterns and emphasis of responses across groups can be identified. Having said this, the aim of the quantitative analysis is not to find generalisable ultimate 'truths' that can be transferred across situations but rather to identify patterns of responses that are particular to and representative of a given situation.

For designers, patterns are important signifiers of what is centrally important to a situation and what needs to be understood; they are part of a sensemaking process. (Kolko, 2010). The artifacts themselves reveal themes (coding), relationships (hierarchies, interdependencies, affinities, preferences) and affordances (space, objects technology, infrastructure and values, attitudes, activities, and behaviors) that can be read and interpreted (Melhuish, 2009). Sensemaking and framing are the phenomenon that describe the process of design synthesis and begin to create a behavioral theory of synthesis both in and out of practice (Kolko, 2010). As Loi and Burrows claim, these processes and tools create artifacts that are appropriate tools for design research and design practice (Loi & Burrows, 2006).

As the processes of sensemaking and framing are normally internal mechanisms for understanding reality, the tools and game play scaffold both designers and non- designers to externalize these processes. The tools, whilst quite rudimentary, enable highly effective methods for sensemaking and framing, eliciting, and subsequently externalizing the process to create a shared "canvas" for synthesis (Kolko, 2010). These processes do not replace but rather enrich and compliment the data gathered via more traditional methods of brief development.

'You look at the cards and then all of a sudden from seemingly nowhere all these words and ideas come flowing out'

(Workshop Participant 2010)

Conclusion

New approaches to learning and new types of learning spaces are not always easily conceived or taken up. They represent dramatic changes to long held models of instructional and attentive learning settings. The 'new learning' calls for new ways of imagining what learning spaces might be: the next generation of learning environments. This in turn suggests the need for new ways of developing design briefs for these environments. By engaging stakeholders in participatory and co-design processes located in a 'social play' space where normative structures and the power of language are set aside and aggression diffused, stakeholders are left free to engage in creative processes that draw forth alternate futures. The use of visual action methods and tools provide ways of developing generative dialogues, visual narratives, and alternative futures, The visual artifacts created provide a rich source of information for the framing and reframing of the brief to inform how the design should proceed.

These collaborative engagements create a bond between participants and allow them to co-create meaning and develop shared understandings and aspirations as a community of practice. The generative dialogue and visual artifacts created through these processes provide insights into what is salient and what is at play. These insights deepen engagement with the

project and make visible many nuances, perspectives and relationships that might otherwise not be revealed.

Visual action methods enrich both the process of design brief development and the information that is captured. The development of such methods and tools is relatively new to processes for the design of learning spaces in the higher education sector. These methods and tools need to produce informative and meaningful insights which requires the development of more theorized understandings of the relationships between space and learning.

The project is still developing and testing the processes and tools drawing on learning theories and social theories as critical frames. These theories begin to bring into focus the relationships between learning and space and to draw out meaningful knowledge.

Knowledge of the relationships between mind/body/space/things is drawn forth on the cognitive, tacit and latent levels including but not limited to professional, affective, kinaesthetic, visual, experiential, local, and embodied knowledge. Using visual action methods reveals the unique histories and practice orientations stakeholders have to offer to the brief development process.

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