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I CAN'T DRAW: REFLECTIONS ON DRAWING AND THE ROLE OF UNCERTAINTY AND LOSS AS DELIBERATE METHODOLOGIES TO FOSTER CREATIVE THINKING SKILLS

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In examining the relationship between drawing as mark making and creative thinking, 'I can't draw' is often cited by students in the Foundation Studies drawing classes we conduct at the University of South Australia. This is perceived as a lack of confidence in undertaking what is seen as a talent activity, the domain of only a privileged few. The same is often said for creativity, thus creating a challenge for academics in how they can assist students to overcome their lack of ability. In building a creative dimension into the drawing experience of students, this lack of confidence and uncertainty reflects a narrow view of drawing as a skill in realistic representation, rather than as a process of thinking and idea generation that utilises speculative exploratory processes that rely on uncertainty and what can be described as a lost state.

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In our teaching work we explore the relationship between designing, drawing and the idea of loss, where loss is interpreted as uncertainty, surrendering control and ambiguity. We consider feeling lost to be a necessary condition for students to challenge themselves through approaches that promote discovery from uncertain starting points. We approach and teach drawing as a process of exploration, whereby learning is not 'instructional' but rather is an uncontrolled pedagogical process, attempting to make sense of visual material.

In particular, we attempt to address the question, 'what constitutes interesting visual material'? This process examines drawing through the lens of how one 'looks and sees' the world in new ways, learning through the experience of uncertainty and how discovery leads to imaginative ideas being explored, articulated and presented.

'Drawings challenged my perception of the world.' (Student reflection, course evaluation instrument)

Dineen and Collins (2005) describe art and design students as explorers finding their way through territory which is at least partly uncharted and rich in uncertainty. This defines the nature of the creativity required from our students and ways that drawing can contribute.

Drawing as Thinking

Teachers often find it difficult to understand and articulate drawing as a process for investigation, experimentation and reflection, where unexpected outcomes and aspects of the learning activity are not always under the teacher's control (Adams 2017, Fava 2020).

However, its role as part of the creative process and its relationship to thinking has come to be recognised as a powerful medium, translating known knowledge in expected, predictable media and rendering techniques to drawing as creative thinking (Cain 2006). The pedagogy of drawing to facilitate metacognitive skills associated with creative practice, is a growing trend where drawing, through augmenting thought processes, is being recognised as an integral skill that enhances and enables innovation (Hetland 2013). This pedagogical approach implies perceptual and conceptual skills and notions of absent-mindedness in creative decision making, allowing one to express through the messiness of a way of working that Carabine (2011) calls 'negative capability'. This process of tolerating and working through the uncertainties and anxieties of one's practice is akin to being in a 'lost state' where exploration and speculative thinking are key. Drawing, seen as a medium for learning, enables several transferable skills in an adaptive process that is linked to visual thinking, research from analysis, speculation, adaption and communication (Tormey 2011).

Drawing as Loss

In our drawing courses students experience the creative process of building understandings in basic design. According to Akoury (2020) one of the main aims of design education is to foster and enable creative thinking abilities, whereby drawing is the medium for critical conceptualisation as a research process that goes beyond projection of thoughts to a study of correlations. The notion of feeling lost enhances the production of meaning by demanding of the student the overcoming of uncertainty by the exploration of speculative scenarios or a loss of control in experiencing the creative act. This process develops ways of working and thinking that foster creative thinking, not merely solving problems, but uncovering issues around problem finding and the development of knowledge that comes from doing and experiential learning. Schaefferbeke, Heylighen (2012) and Adams (2017) utilise terms such as 'extended drawing' and 'power drawing'. They describe how drawing is connected to design activity and learning in a creative process that moves from perception, communication and manipulation to invention. Riley (2017) argues that drawing nurtures an 'intelligence of seeing' and contributes to the creation of meaning through mark making.

Loss Through Ambiguity

Ambiguity or a state of 'not clearly knowing' is acknowledged as a basic mechanism underlying creative tasks and is the driver of truly innovative thought (Root-Bernstein 1999). This notion of not knowing, along with uncertainty, is an important element in the creative process (Goe 1997) and can be enhanced through an open approach to drawing. However, one must be free from culturally conditioned perceptions of reality that are often associated with traditional drawing instruction in order to construct the variety of meanings that a creative approach facilitates. The ability to tolerate ambiguity by linking complexity and novelty enhances creative potential and creative problem solving, but necessitates an ambiguous period in which the problem is clarified and solutions are considered (Harding and Hale 2007, Balgiu 2014). From a teaching perspective, awareness of this presence of ambiguity from product to evaluation contingency must be complimented by an awareness of one's own uncertainty about them and the skills to productively utilise this uncertain state in the creative process (Breugh and Colihan 1994). Individuals who display the ability to tolerate ambiguity are more likely to engage in problem finding, problem solving and evaluation by avoiding premature decision making. They create their own meanings for situations free from externally imposed rules and conventions (Rubin, Fein and Vandenberg 1983).

Students and academics face competing tensions when rigid accountability driven levels of clarity and structure compete with the need for open-ended creative ways of working. To overcome this, approaches are needed that embrace ambiguity (Harding and Hale 2007). This 'sticky curriculum' is based on uncertainty and often full of unknowns (Orr and Shreeve 2018).

Creativity relies on the novel associations that can be made from known situations in a disorderly process of invention that challenges existing procedures (Wanng, Zhang and Martocchio 2011). In the visual realm, as in all creative acts, one does not know beforehand what the outcome will be. Ideas become apparent through the process of exploring and prototyping possibilities. This 'not knowing' or 'feeling lost' is a state of mind that one needs to be comfortable with in order to avoid the preconceptions that can hinder original thought. Cain (2006) sees it as knowledge-constituting, which

involves a dialectic process between 'knowing and not knowing'; a fluidity of thought based on enquiry and not specifically knowing what one is making until it materialises.

Loss Through Uncertainty

Uncertainty or a state of doubt is another way of experiencing this concept of loss that, according to Beghetto (2019), is necessary for creativity, opening new possibilities for thought and action. Embracing uncertainty involves experiences in speculative thinking or sitting with a problem or challenge in a 'problem exploring' situation. This encourages deeper thought in identifying what the real problem is and time for interrogation to determine the true nature of the situation. Moving too quickly to resolve a state of uncertainty or loss may create options that are not viable and early resolution may be problematic, as it does not allow the time frame to ask the right questions (Beghetto 2019, Reisman 2016).

Routines and habits need disrupting if new ways of thinking and acting are to be embraced, rather than avoided or hastily and prematurely resolved (Comstock 2018). Creativity occurs or is needed when one comes to an impasse, challenge or disruption in the order of things and it is this state of affairs that creates uncertainty and a feeling of loss. It can be argued that the role of education is to prepare students for the future, albeit one that is uncertain (Mishra and Henriksen 2018). Jobs that rely on creativity have traditionally lacked specific role descriptions (Kazanjian, Drazin and Glyn 2000) and the role of ambiguity is deemed an inherent feature for future jobs requiring creative skills in organisations facing uncertain environments (Kaur Majithia, 2017). Individuals with a high tolerance for uncertainty are confident and self-determined in their capacities to be creative, whereas individuals intolerant of ambiguity perceive this uncertainty and being in a state of loss as threatening and intimidating (Wannig, S, Zhang, X and Martocchio, J 2011). Creativity and uncertainty are therefore seen as important areas of learning to cope with change and the preparation of students for twenty-first century learning (Henriksen et al. 2016).

Imagination

Imagination is that unique quality and attribute that sets humans apart from all other living creatures. It allows us in an evolutionary means to move from adapting to our environment for basic survival to actively adapting the environment to suit our needs. However, according to Wellerstein (1998), if the future were certain and predictable there would be no compulsion to do anything new or different. The essence of human creativity is based on the desire and ability to cognitively model future states of change. This involves embracing a state of feeling lost, as one moves through uncertainty as the precondition necessary to engage in speculative thinking. The use of drawing in this creative act provides a powerful thinking tool to facilitate this process.

If drawing is to progress from its narrow-skilling, discipline-based tradition and have a place in the curriculum, design-based learning will be required to facilitate democratic and student-centered pedagogy that acknowledges the diverse nature of students and of learning styles (Gardner 1993). This involves a design-thinking approach, working with imperfect information from uncertain starting points and without absolute right or wrong answers, in other words, a feeling of being lost that comes from feelings of uncertainty. This process incorporates the interrogation of values and contested issues (Keirl

2004, Maisuria 2005), a dialectic and dialogic enquiry method through modelling that, according to Spendlove (2017), facilitates critical thinking, opposing conventions and proposing new ones.

Making drawings enhances this process by avoiding interpretations and allowing an 'emptiness' or a 'lost state' in which to operate. Frank (1993) describes drawing as meld between seeing and mark making in what he called 'seeing/drawing' as a process of heightened awareness. This is influenced, not by looking at things from preconditioned mindsets, but by seeing from the 'belly' where one comes to know from a lost state of not knowing or emptiness.

'This memory-based method we are accustomed to was shattered in an instant.' (Student reflection course evaluation instrument)

Structured Uncertainty

Teachers may have predetermined expectations of lesson outcomes and student responses. However, despite the best planning, unexpected results may occur (Akoury 2020). When they do, teachers' willingness to go with an unexpected response is vital and, although some of this can occur within the context of the lesson, there is certainly no guarantee or consistency. Presenting students with opportunities to work through their drawing and to experience uncertainty through a structured approach has become an aspect of our pedagogy, a process that acknowledges the impediments to students' creativity and an aversion to uncertainty and a feeling of loss. This avoids the idea that creativity is unstructured and only reliant on free expression from some mystic source. Removing these impediments assists in building confidence to discover new opportunities within existing drawing curriculum frameworks by adding a creative dimension to activity outcomes. Beghetto (2019) refers to this process as 'lesson unplanning' or unlearning, where opportunities for uncertainty are presented by removing certain predetermined components or structures of planned lessons, such as strict problem identification, process, product outcome or set criteria. From our experience this can be difficult to achieve in the imposed prescriptive order of mainstream pedagogical theory in higher education.

We have introduced a creative, design thinking foundation through drawing that can be instructive while encouraging creativity by applying knowledge other than in a 'tried and tested' traditional way. This challenges the often highly structured approach of educators designed to eliminate uncertainty in the student experience (Beghetto 2019). Student feedback from our courses confirms acceptance to challenging this structured approach and teaching staff are also aware that this creative aspect of drawing needs to employ effective strategies to be taught in a more meaningful way (McWilliam 2007, Gluth and Corso 2017).

Projects are presented that allowed for multiple interpretations, such as the visual expression of words, phrases and even music, where students deliberately move from familiar meanings to novel ones and where responding in time is essential. The use of spontaneous emotions and reactions in the form of marks to these stimuli provides a provocation that unhooks the 'known,' allowing visual outcomes not previously experienced or articulated to emerge.

'I gained more insight into the plethora of "inside information" that is present within every figure, object and composition we were asked to translate on to our page.'
(Student reflection course evaluation instrument)

We encourage students to embrace uncertainty by approaching problems from many perspectives by asking questions and exploring not what is true but what could be true. By imaginatively framing questions we aim to produce graduates who can think about the relationship between all the parts and the whole, by envisaging the big picture and not be limited to the expertise of their discipline (often certain), but imagining its relationship with everything else. We have established a process that provides students with opportunities to work, deal and engage with a feeling of being lost and uncertainty in what Bednar and Welch (2006) describe as 'structured uncertainty'. Original expression is generated by reframing questions and deliberately transforming from certainty to uncertainty, such that ambiguity provides new insights and understandings.

In our Foundation studies we have introduced an aspect of design and creative idea generation underpinned by drawing, incorporating a range of specific creative thinking approaches such as challenging assumptions, analogous and metaphorical scenarios, and random input to speculate on new ideas. In the challenging assumptions process, for example, students move from known validated data about a topic – let's say a chair – to deliberately challenging that validity through a provocative statement that provides a new entry point for exploration. Can we challenge the assumption that a chair is ideally meant to be comfortable to a statement that specifies the notion that a chair can be uncomfortable and yet useful? The result might be a chair that you can exercise in to keep fit while you are at a workstation. The idea is then expressed through a series of concept drawings.

Teaching Approaches Encompassing Loss

Our teaching for creativity and innovative thinking through drawing involves high levels of improvisation by getting students to respond to what happens, rather than sticking to a planned procedure and outcome. We allow students to co-construct their knowledge in a design thinking, learner-centred, problem-based learning (PBL) approach. Learners are provided with opportunities to explore, collaborate, research and respond to real-world problem scenarios and challenges, which by their nature are uncertain. For example, a drawing exercise in the local shopping centre evolved into a visual study of shopping habits and processes which were subsequently challenged through a design process. This unearthed new shopping scenarios factoring in new technologies, lifestyle and work changes, to provide alternatives to the traditional shopping experience. Drawing thus led to insights and speculative alternatives from observations elaborating on that initial traditional drawing task.

'I am no longer afraid to begin a drawing or make mistakes.' (Student reflection course evaluation instrument)

We guide learning towards a series of outcomes building knowledge together in ways that are not always predetermined: a design drawing process that relies on observation and mark making to question and redefine scenarios, speculating change and ideas that are prototyped into new meanings, resulting in systematic loss or evolution from original intentions or preconceptions. For example, a transformation drawing exercise might take an object from one category through an evolutionary change into another, for instance from a manufactured object to a natural one, with drawings of the intermediary steps that are convincing.

We encourage letting go or not being precious about one's work through approaches such as 'blind' contour drawing. Students are urged not to be preoccupied with traditional memorised drawing symbols, image and mark making through a loss of control evolving new and unexpected configurations

where eye and hand work as a team. Students are also encouraged to lose or break convention of sole ownership of a drawing by utilizing a collaborative drawing design thinking approach. This forces new ways of interpreting and decision-making using marks on paper that rely on collaboration and negotiation for new meanings.

Facilitating the creation of new knowledge is achieved through ways of working based on prototyping, technical innovation, exploration of new procedures utilizing design thinking and drawing that are supported by Jean Piaget's thoughts that learning and creating are fundamentally intertwined (Sawyer 2006). We emphasise the ability to think reflectively and externalise skills and in so doing understand what we determine as the *thinking behind the thinking*. From this, students learn the art of structuring an argument and to elaborate on their thinking through the iterative process present when designing, drawing and making.

Creating new understandings occurs when transforming feelings of loss into structured uncertainty through a sense making visualising processes (Weick 1995), developed in an environment where students are challenged to work and extend themselves just within or just beyond their reach (Kimbell 2009). Many drawing exercises challenge students to solve problem tasks using visualising as a way of thinking. For instance, drawings that allude, through a chosen medium, to the complete opposite of the existing function and nature of the objects being drawn.

Overcoming Preconceptions

We place emphasis on the examination and identification of the things that inhibit creativity and visual communication, particularly things like a fear of making mistakes. There is a need to accept loss as a condition to spark speculative thought, eliminating the need to be right, and to have an expected answer that follows a predetermined process. Students are encouraged to challenge the expectation that a process needs to lead to a solution in a set way or set routine. We question that ideas only come at certain times in certain places, using only logical, analytical, routine or judgmental thinking. Challenging their assumptions or preconceived ideas through the proposition of 'alternative hypothesis' is paramount (Spendlove 2017). Students are asked not to take things for granted by defining and recognising that the assumptions we carry are often based on certainty. In order to challenge them, we encourage students to accept that any assumption or preconception can be disputed or reversed, leading to new possibilities. It is acknowledged that many external factors which relate to habit, expectation, rules, standards, traditions, conformity bias, etc., inhibit creative ability (Adam 1999, Davis 2011).

To overcome students' feelings of loss and uncertainty we have developed some of the following approaches:

- We aim for *fluency* by encouraging students to draw utilising a range of applications, but primarily to express and display many ideas, without critique, by withholding judgment no matter how crazy, seemingly silly or inappropriate the initial imaging of ideas may seem. Students are challenged to rapidly interpret through marks, words expressing various emotions like fear, happiness, etc. This does not allow for detailed thought on expected outcomes, the rapid nature creating a lost state from which to work. Generating a large volume of visual ideas without judging allows all ideas an opportunity to be considered, no matter how irrelevant they may initially appear (Runco and Jaeger 2012).

- *Flexibility* was developed as a strategy for students to explore a variety of different ideas, reinterpreting, experimenting and restructuring them into new visual configurations. Students have to take an object and substitute different textures, patterns, etc. to change the physical appearance (for instance, hard textures being made to look soft and fluffy, etc.). This ‘opposite’ approach involves comparing or substituting things with similar or comparable qualities, taking an existing idea/image from one situation, discipline or application and visually applying it to another (Osborn 2001), thus enhancing and challenging the loss of preconceived identity.
- *Originality* in students’ work is encouraged as a means of promoting personal interpretations, such as playfulness, risk taking, embracing error and using humour and absurdity. We aim to heighten perception and encourage creative thought by using other stimuli, such as smell, music, touch, movement or dreams. Examples include where students ‘feel’ an unseen object and describe it for someone else to draw and creating self-portraits based on feeling/touching their faces without utilizing vision. This loss or removal of convention to the process encourages examination of the uncertainty to stimulate originality.

‘Knowledge I have embodied to create more unique and diverse designs.’ (Student reflection course evaluation instrument)

We are aware that time must be allowed for creative ideas to emerge and to think things through on conscious and unconscious levels. Students acknowledge the role of intuition, putting ideas into the mind, stirring them and allowing plenty of time for responses from the uncertainty of the unconscious. Bedside, sketchbooks are encouraged so that thoughts and ideas emerging from dreams can be immediately recorded before forgotten. Feeling lost or states of uncertainty are the spur for creative insights, often resulting from processes that are unconscious and that lie below the level of awareness in a state of loss (Saeb, McCammon and O’Farrell 2007).

Drawing projects are structured so that the above examples of creative process can be applied in ways that allow students time for production as well as meaningful reflection as a means of deepening understandings. Students are expected to keep a sketchbook journal that articulates their processes and thoughts aligned to their mark making. Comprehensive notes are provided on ‘What is a Reflection?’ so that deep questioning and learning can take place. This is a requirement for all their work and is factored into formal assessment where self and peer evaluation are encouraged, not relying on expectations of how society will assess the ideas, but by considering the tasks and processes that participants have determined for themselves.

Confidence in one’s ability to think and work creatively is necessary in moving from creative potential to creative action (Beghetto and Karwowski 2019) and we recognize the importance of confidence in the overall drawing/creativity experience. We encourage students to identify and conceptualize new ideas by providing positive experiences of the process and modelling effective ways of working before slowly adding complexity as participants’ capabilities and self-assurance in dealing with uncertainty develop to an appropriate level.

Students are challenged to visually transfer information from familiar, existing categories and apply them to uncertain situations in the construction of new unique patterns and diverse configurations as a way of generating novel ideas. An example is where students through drawing have to invent a fantasy creature that conforms to anatomical conventions identified in preliminary studies of existing creatures which are then gradually evolved into a visually imaginative but convincing image that relies on a gradual loss or evolution from the original identity.

Conclusion

Our work has enabled us to help students develop the confidence that they can draw and participate in the dynamic relationship between designing, drawing and the loss of certainty. We argue for the importance of embracing uncertainty and ambiguity in our design and drawing programs and by association the notion of loss in the creative process as a necessary precondition to the design-thinking skill set our students as future designers require. In a rapidly changing future world, defined by uncertainty and the subsequent feeling of loss in not being able to always rely on familiar or predictable routine processes, the ability to embrace these conditions will create the flexible and agile mindset to deal with future challenges. We have attempted to reposition drawing from a perception as a talent-based reproductive process – the domain of only a few – to drawing as a medium for conceptualisation as a research process. We argue that the production of meaning requires students to explore speculative scenarios and discovery from ill-defined situations and this process will often involve dealing with a feeling of loss as determined by ambiguity and uncertainty. This lost state is to be encouraged and welcomed in a positive way as a necessary condition for creative thought and action.

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