

RESPONSIBLE CREATIVITY IN DESIGN EDUCATION

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ABSTRACT

Creativity is a key concept in the scientific discourse of design education. Conducting a word search, the concepts ‘creative’ and/or ‘creativity’ featured 128 of the 165 papers published at the *DRS//CUMULUS Oslo 2013 2nd International Conference for Design Education Researchers*. Creativity, as a generic human ability, can drive new ideas or artefacts that contribute to both environmental protection and degradation, human aid and human-made disasters. To support a socio-ecological transition that rethinks current modes of making, production and consumption, the creativity of designers has to pair up with concepts that promotes ethical concerns. This paper explore how design education at a secondary and tertiary level can draw upon the shared transformative agenda of critical reflection and design. Critical reflection unearths, questions and rethinks sociocultural practices, and the capacity to transcend the known is the expertise of design. A structure of reflective inquiry: 1) Confrontation, 2) Exploration, 3) Evaluation and 4) Transformation adopted to a systems-oriented design process might provide a platform to connect students to real-world problems and the complexity of creating.

Keywords: Responsible creativity, reflective inquiry, systems-oriented design.

1 CREATIVITY IN DESIGN EDUCATION

The results of human creativity take shape as both weapons and midwifery kits, machinery for rapid deforestation and plans to save imperilled bees. Creativity is a generic human ability that enters into virtually every aspect of life [1], and can drive new ideas or artefacts that contribute to both environmental protection and degradation, human aid and human-made disasters. Schlitt defines creativity as the following: ‘creativity is the ability to transcend traditional ideas, rules, patterns and relationships, and to make meaningful new ideas, forms, methods and interpretations’ [2:1356]. The concept ‘meaningful’ is the key to judge the results of human creativity as valuable or not. Drawing upon Vande Zande’s [3] conceptualisation of innovative design as a unique solution that creatively satisfies problems, the ethics of designers derive from the product scopes they choose to address. In design education, the product scopes indicate what expectations students would have to address for their projects to be evaluated as meaningful. It makes a vast difference whether students are asked to design products created to increase sales, or to design useful and lasting products or services that improve quality of life and solve problems like pollution. As a generic human ability, creativity claims no responsibility for a better tomorrow. The creativity of future designers has to pair up with other concepts to support a transition towards more sustainable modes of production, trade and consumption.

Craft [4] makes use of the notion of ‘responsible creativity’ in describing the GoodWork project’s concern with human creativity. She states that, ‘Promoting children’s creativity in the context of wider ethical dimensions of our existence is not an optional extra’ [4:149]. Craft argues that the fostering of creativity in its ethical context is applicable to all young people if we are to expect responsible actions of them as citizens, both at home and at work. Designers, policy makers, investors and consumers all make choices that will influence our future visual and material culture—the mitigation or continual growth of pollution and overconsumption. Basic ethical questions of how a new idea for a product or service makes the world better are vital, and prove just as important to integrate into the design process in general education as in the education of professional designers.

This paper explore how design education at a secondary and tertiary level can draw upon the shared transformative agenda of critical reflection and design in order to frame the educational content of responsible creativity that empowers citizens to promote sustainability and meet global challenges ahead. To introduce the concept, my study on how creativity is described and promoted in *The DRS//CUMULUS Oslo 2013 conference proceedings* is revisited [5].

1.1 Five storylines on creativity in the scientific discourse on design education

With the strap line ‘Design Education from Kindergarten to PhD’, the *DRS//CUMULUS Oslo 2013 2nd International Conference for Design Education Researchers* gathered 278 delegates from 43 countries to explore the idea of design education as important for all citizens. The Chair of the conference, Liv Merete Nielsen, promoted design education for all as a game changer for consumerism, enabling a bottom-up citizenry to be knowledgeable consumers demanding sustainable design solutions [6]. The organisers of the conference received 225 full papers. After a double-blind peer-review process, 165 papers were selected and included in the conference proceedings [5]. The papers total 2,330 pages and provide a vast database to explore the scientific discourses of design education in the transdisciplinary and international context anno 2013. In the paper [7], I made the 165 papers a sample to review how the field of design education frame the concepts ‘creative’ and/or ‘creativity’.

The review situated creativity as a key concept in the scientific discourse of design education, as these concepts were featured in 128 of the 165 papers, in 10% of the titles and in the 3 introductory texts of the conference proceedings. In some papers, the concepts are keywords, extensively defined and used on nearly every page of the paper; in others, the concepts appear only once. The next phase searched for generative narratives—storylines [8]—on the meaning of creativity in the context of design education. Given the vast amount of text, the abstracts were key to navigating through the proceedings, and the analysis focused on the papers in which creativity is a key aspect of the discussion. Given the broad scope of the conference, the *DRS//CUMULUS* papers use the concepts ‘creativity/creative’ in a wide variety of contexts, and the authors have many different agendas in using these terms. Storylines are an approach that encompass the complexity of the scientific discourse on ‘creativity/creative’ and provide a semiotic tool to voice different narratives in the discourse. The discourse refers to ideas, concepts and categorisations that are produced in the practice of writing papers for a conference. Five storylines on creativity [7] were identified in the *DRS//CUMULUS 2013* proceedings:

1. **Creativity is the core of design as a discipline.** Promotes creativity as the most fundamental quality that design students need in order to enter the community of professional designers.
2. **Creativity is not an ability exclusively for the field of design or design education.** Understands creativity as an aspect of human intelligence in general that enters virtually every aspect of life.
3. **Creativity means newness and expediency.** Focuses on outcome of creativity; a new, meaningful and valuable solution that satisfies a problem based on knowledge of previous solutions.
4. **Creativity is a skill that people can learn.** Exercises, activities and techniques cultivate creativity, and methods provided by the field of design education are valuable across different sectors.
5. **Creativity advances economic competitiveness.** Identifies learning and managing creativity techniques as a prerequisite to innovation and success in a globalized market.

The five storylines situate creativity as a generic human ability for which the field of design education eagerly claims responsibility. Creativity is embraced as a skill to learn, and several papers promote the value of techniques derived from the design process of problem solving as generic methods to cultivate creativity. Comprising the scientific discourse in the *DRS//CUMULUS* conference proceedings, creativity is defined as the ability to make valuable and meaningful new ideas based on knowledge of previous work. Still, what makes an idea valuable, and to whom is it meaningful? Storyline 5, ‘Creativity advances economic competitiveness’, relies on a recognition of creativity as one of the main driving forces of economic development. New ideas, forms and methods are judged meaningful in terms of business. In this way, creativity strengthens just one out of three mutually reinforcing pillars of sustainable development [9], namely economic development, at the expense of social development and environmental protection. To enable a socio-ecological transition that rethinks

current modes of making, production and consumption, the creativity of designers has to pair up with other concepts. The scientific discourse in the DRS//CUMULUS conference proceedings was searched for options.

1.2 Pairing up with creativity

Boehnert [10] stresses the link between ecological literacy and design as she upholds systemic understanding, ecological knowledge and critical skills as foundations of responsible design. Mateus-Berr [11] and her co-authors address responsible design in their paper on the social responsibility of designers, and criticise the way established design strategies reinforce global capitalist desires and create desire for new products. The authors argue that designers have played a considerable role in shaping today's consumerist culture by providing their skills and talents [11], and they call for a shift of focus in which design does not refer to the shaping of consumable items, but to the creation of structures that aim at improving quality of life. Sevaldson [12] describes systems-oriented design as an approach to deal with complexity as a designer to reach solutions that combine ethical issues with sustainability, economy, new technology and social and cultural considerations. Ingalls Vanada [13] makes big picture thinking a central issue in her paper on how to educate tomorrow's change makers and problem solvers. With a view towards fostering deep, connected and independent thinkers, she balances creativity with practical wisdom and the ability to think critically.

Boehnert [10], Mateus-Berr [11], Sevaldson [12] and Ingalls Vanada's [13]'s shared agenda is to take the wider social and environmental impacts of design solutions into consideration when judging new ideas as meaningful or valuable. Critical thinking is described as the skills needed to navigate complexity and ethical concerns, and is key to judging the proposed designs or product scopes as responsible. What would the field of design and design education gain from pairing up with critical thinking? There is a notable lack of consensus regarding the definition of critical thinking [14]. To address the question of how critical thinking can adapt to design and might be implemented into design education, the first question to answer is, 'what characterizes critical thinking as a distinctive operation of thought?'

2 CRITICAL REFLECTION AND THE COMPLEXITY OF MAKING

2.1 Critical reflection – a distinctive operation of thought

Exploring three key texts on reflective inquiry, *How We Think?* By John Dewey, [15], *The Reflective Practitioner* by Donal Schön [16] and *The Pedagogy of the Oppressed* by Paulo Freire [17] for ideas to inform the Education for Sustainable Consumption [18], I identified a structure of four shared phases across their different agendas. All three texts describe the experience of a temporary collapse in the ordinary script of life as the fuse of reflective inquiry, the experience of confrontation (1) that calls a person's own habitual patterns into question. In the next phase, current sociocultural realities are explored (2) to enhance knowledge of the situation. The information provides a backdrop to evaluate (3) prevailing practices and habits of mind in an evaluative phase that aims to gain new understanding. Change is the ultimate goal of the process, and occurs when new understanding enables a creation of transformed (4) actions and habits of mind. Reflective inquiry as a distinctive operation of thought is described as: 1) Confrontation, 2) Exploration, 3) Evaluation and 4) Transformation [7].

The idea that unifies the texts is that awareness gained from unmasking reality is the precognition for change, but there is a vital difference between the texts regarding whether reflection is linked to the prefix 'critical' or not. Reflection without the prefix operates towards improvements within an established field of practice—the how of action, while critical reflection addresses the why of action, and aims for a profound change in our attitudes and actions [19]. Dewey [15], suggest to settle the situation based on a firm basis of evidence derived from existing knowledge. The text by Schön [16] is not so easily located. The reflective practitioners of Schön are considered to be improving their practices within the framework of an established system. Fook [20] even argues that the popularity of Schön's work has conflated 'critical reflection' with 'reflective practice'. In the few sections in which Schön [16] does use the term 'critical', he describes the surfacing of initial understanding as a prerequisite to coping with troublesome situations and framing one's role or describing a phenomenon differently. Depending on the extent of the reframing, Schön [16] might be located in an intermediate position. Freire [17] is the scholar amongst the three that promotes a practice of critical reflection, advocating 'the very transformation of the world' [21], as the agenda of reflective inquiry. It is the

‘why of action’, and the more radical transformative agenda that the field of design education would need to promote responsible creativity and change the way people interact with the world, and thus, more closely align to Freire’s [17] ideas of empowerment.

2.2 Design and critical reflection – a shared transformative agenda

In *The Pedagogy of the Oppressed*, the Brazilian educator Freire [17] brought attention to what he framed as the banking concept of education. Here, students receive, file and store narrations from teachers in the empty vaults of their minds. The banking concept of education offers few opportunities for students to analyse how political, cultural and social contexts shape their lives. Freire [17] wanted to empower people to take action against oppressive powers and perceive a limiting situation not as a static reality, but as transformable. The author cites *critical consciousness* as a key to empowerment: ‘To surmount the situation of oppression, people must first critically recognize its causes, so that through transforming action they can create a new situation, one which makes possible the pursuit of fuller humanity’ [17:47]. Freire’s alternative to the banking concept of education is the practice of problem-posing education. Here, teachers pose a problem that challenges humans’ relations in the world and with the world, and facilitate a dialogue of co-investigation with students to unveil oppression and situations as historical realities susceptible to transformation [17]. The core of Freire’s libertarian and humanist pedagogy is for people to discover themselves as permanent re-creators of the world: ‘To exist, humanly, is to *name* the world, to change it’ [17:88]. Freire seeks to enable people to transform the sociocultural realities that shape their lives by the words they choose and how they act. Critical reflection in the tradition of Freire encourages the recognition and questioning of uncritically accepted dominant ideologies embedded in everyday situations and practices, an assessment of their morality and consideration of alternatives that would voice and change human interaction with the world.

Design and critical reflection share the same transformative agenda. In his seminal book, *The Science of the Artificial*, Herbert Simon [22] describes design as concerned with how things ought to be, as opposite to the natural sciences that are concerned with how things are. The capacity to transcend the known is the expertise of design. To address the complex problem of overcoming a world made unsustainable [23], the declarative logic of natural science, the reflective logic of critical thinking and the normative logic of design might complement each other. Orr [24] coins awareness and action as he describes prerequisites to ecological literacy: ‘the study of environmental problems is an exercise in despair unless it is regarded as only a preface to the study, design and implementations of solutions’ [24:94]. To act as responsible citizens, awareness of unsustainable consumerism and severe climate change is crucial, but to evoke empowerment, students need to recognize their capacity to transform that reality. Transcending the known as a designer might just lead to another product, judged meaningful in terms of economic development. Design needs critical thinking to reject practices of overconsumption and destructive results of creativity. The final section suggest how a structure of reflective inquiry 1) Confrontation, 2) Exploration, 3) Evaluation and 4) Transformation can adapt to a designerly approach that addresses the complexity of making; systems-oriented design [25] as a platform to promote responsible creativity.

2.3 Coining systems-oriented design and critical reflection

Systems-oriented design integrates systems thinking with design. Systems thinking entails a shift in perception from the part to the whole—learning to think in terms of relationships, inter-dependencies, patterns and contexts: ‘Systems thinking is ‘contextual,’ which is the opposite of analytical thinking. Analysis means taking something apart in order to understand it; systems thinking means putting it into the context of a larger whole’ [26:30]. Systems thinking entails an approach in which designers unfold the societal context to understand connectedness and identify areas of advancement. In Schön’s [16] terms, practitioners set the problem. In terms of systems-oriented design, they identify relationships and map complexity through a process of visualisation. The socio-ecological context of a product, service or practice can be unfolded in a vast collage of images and text, a process called GIGA-mapping. Sevaldson [26] explains GIGA-maps as an attempt to grasp, embrace and mirror the complexity and wickedness of real problems. A GIGA-map is a visual aid to understand relations and structures in a system made by interrelating and systematising knowledge, preconceptions or speculations of relevance to a certain subject [28], [26]. The process of making a GIGA-map enables designers to recognize complexity and become aware of sociocultural reality. The detailed and

information-dense map provides a visual aid to conduct reflective inquiry, identify areas of advancement and derive new modes of production, trade and consumption.

Phase 1, Confrontation: teachers pose a complex real-world problem that calls the students own habitual patterns into question and challenges their ordinary script of life. I.e., Why does the majority of the Western population regard overconsumption as serving our best interests? How could I as a designer contribute to changing this attitude?

Phase 2, Exploration: students identify habitual patterns of expectation, dynamics of power and ethical dilemmas as relevant to the complex real-world problem in a GIGA-map.

Phase 3, Evaluation: students use the GIGA-map as a shared platform to identify and discuss ethical dilemmas and structures of power, and to question and evaluate economic, social and environmental interrelations, as well as design's role in maintaining or changing the situation.

Phase 4, Transformation: students identify areas of improvement and explore alternative scenarios through a dual process of unfolding possible solutions and questioning whether they transform reality for the better.

2.4 Final remarks

Cultivating responsible creativity implies that design education promotes critical reflection. Future designers need to think of themselves as part of the problem: address the loss of ethics, question assumptions that are taken for granted, disrupt the naturalization of our unsustainable practices and unveil dynamics of power. A core part of the teacher's role is to draw the students' attention to the wider social and environmental impacts of design and engage them in critical scrutiny of their own and their classmates' ideas based on real-world knowledge. The game changer is the capacity is to construct alternative scenarios and identify how things ought to be. GIGA-maps provide a tool to show complexity and a shared visual aid to conduct reflective inquiry, identify areas of advancement and derive ethical modes of production, trade and consumption.

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