

# SOCIAL DESIGN AND PARTICIPATORY RESEARCH: TRANSFORMING THE CURRICULUM IN HIGHER EDUCATION

DYNAMICS

SÓNIA MATOS

MADEIRA INTERACTIVE TECHNOLOGIES

& EDINBURGH COLLEGE OF ART

SONIA.MATOS@M-ITI.ORG

NEGOTIATIONS

EMMA GIEBEN-GAMAL

EDINBURGH COLLEGE OF ART

E.GIEBEN-GAMAL@ED.AC.UK

## ABSTRACT

In this contribution, we reflect on the pedagogical and theoretical underpinnings of an undergraduate course that we developed in the School of Design, Edinburgh College of Art. The course was designed to extend the learning opportunities for tackling societal challenges through the design curriculum as well as to overcome the still common divide between theoretical and studio courses in design education. Employing an integrative and reflexive approach to learning and teaching, our intention was to blend critical understanding and practice through a participatory approach to research. Therefore, we argue for the role of active engagement with communities as a means to transform and empower students' understanding of complex social challenges. Moreover, we explore the potential of active engagement to meet the challenge of delivering a curriculum that introduces students to a range of social issues in a theoretically informed way while also equipping them with the critical facilities to apply multidisciplinary approaches within design contexts.

## INTRODUCTION

Participation has played an important role in the development of social design (Triggs 2016:140). However, despite the impact that we are witnessing in this regard, little and sustained reflection can be seen at the level of design education. It seems that greater emphasis has been directed toward a discussion of the role of participation in the act of design itself without probing the role of participatory design research as a means to engage and transform design students and communities. We believe that research itself has overarching implications for student engagement and learning but also for the communities that design students interact with. Our key argument is therefore that more importance should be given to the lessons that can be learned from participatory research.

As a backdrop to our presentation and discussion, we will also argue in this contribution that while design education in the UK and more broadly is increasingly turning to a social and participatory design methods, there is a tendency to approach mixed-method research in a pick and mix fashion, which often lacks the necessary connection to a theoretically informed contextualisation of the issues addressed in the design brief, or even a methodological understanding of the methods employed. Therefore, this paper will explore how this gap can be bridged by: (1) rethinking the role of participatory design research in design education; and (2) by highlighting the importance of exposing design students to participatory research as well as to key epistemological positions within social science. This last point will support a critical discussion of fast track social science research methods in design education.

In response to this year's call for the development of 'humanistic approaches in design based inquiry', we will finally explore the potential for an integrative and reflexive approach that employs participatory research while providing students a critical, theoretical and historical foundation in the analysis of their investigations and work.

## SOCIAL DESIGN AND HIGHER EDUCATION

The field of social design can be traced to the 1960's with the work of Kevin Garland in the *First Things First Manifesto* (Shea 2016: 20). In this manifesto, it is possible to witness one of the first attempts to question the assumption that design can only be defined by its commerce-driven pursuits. Even though contemporarily we can see ways in which commerce and design for social innovation might go hand-in-hand, we can still recognise how Garland's manifesto opened a new page for design and, more importantly, for design education.

Fast-forward to 2003, Steven Heller and Véronique Vienne also proposed key reflections on socially responsible design and its impact on education which has been characterised by a greater engagement with or consideration of the end user. However, the degree to which students are guided through this is a moot point. Roy Behren's speaks, in this volume, for example of 'teaching as a subversive inactivity' (Behren 2003: 213-215), describing the all too familiar activity of stepping back to allow students the opportunity to explore topics on their own. Kees Dorst's article 'Design Research: a revolution-waiting-to-happen' extends the field by reflecting on the importance of a more in-depth understanding of the 'design context', 'object' and 'designer' (Dorst 2008: 6). Read in light of Behren's ideas, Dorst's call for an understanding of a specific 'design context', will often mean, at least from our perspective, that students have much to learn from what happens outside the walls of academia.

Recent contributions from the NORDES' community can be seen in the work of (Jones and Lundebye 2015) and (Moreira 2015). Elizabeth Resnick's *Developing Citizen Designers* (2016) also extensively focuses on the role of education in the development of the field. In fact, in Resnick's contribution, Teal Triggs (2016) recognises that the emphasis on social design has urged the development of participatory tools and methods, a practice that has implications for design professions as well as within education. In particular, she argues that while an understanding of context was already in place - see for example the development of user-centred design or even design anthropology - the development of social design through collaborative modes of inquiry and practice (with communities of users and actors) requires renewed understanding of the field (Triggs 2016).

However, perhaps less recognised is the need to radically rethink the design curriculum through what filmmaker and community psychologist Myra Margolin has identified as the teaching of 'social literacy'

(Margolin 2016: 276-77). For while design has long relied on the development of a range of technical literacies, it now seems important to redirect our educational efforts toward a new set of skills. From observation, participation, ethnographic fieldwork and writing, collaborative, participatory design or co-design the list could continue to include a set of social innovation skills. The list of research tools and methods attest to a growing field that nonetheless needs to surpass the simple desire to advocate a curriculum that aims for social innovation. As suggested by Alain Findeli in 'Rethinking Design Education for the 21st Century: Theoretical, Methodological and Ethical Discussion': "it is (...) not really original to claim that we are in a period of necessary change" (Findeli, 2001:5). Perhaps more original is to rigorously and systematically document and analyse how social design, participation and ethics is being introduced to the curriculum while proposing a critical foundation as well as an understanding of the skills that students will need in the years to come.

Returning to Resnick's (2016) edited book, Cinnamon Janzer and Lauren Weinstein (2016: 287) point towards a similar project even though their focus highlights the "risks of adapting methodologies at leisure", namely the methodologies that are borrowed from the social sciences. In their critique, concern is directed toward the more recent wave of 'toolkits' and 'primers' that are widely available online. Promoting a "rapid research approach to gather quick insight" (Janzer and Weinstein 2016: 287), some of the sources that are currently on offer distort many of the methods that are borrowed from the social sciences while aligning these methods with a purely commercial design tradition that social design often wishes to contest. Janzer and Weinstein's critique is particularly vested in the temporal dimensions of research as well. According to the authors, Frog's *Collective Action Toolkit*, IDEO's *Human-Centred Design Toolkit* and even AIGA's *Ethnography Primer*, 'fail' to convey the prolonged temporal dimension of ethnographic research and practice. They also 'fail' to provide tools and frameworks that promote a more 'rigorous' understanding of the complex social, cultural and political contexts in which we design (Janzer and Weinstein, 2016) (Spinuzzi 2005).

Diana Forsythe is perhaps more emphatic in her criticism of the adoption of "do-it-yourself ethnography [which] may confer the illusion of increased understanding when in fact no such understanding has been achieved" (Spinuzzi 2005: 168 referring to Forsythe 1999). Moreover, Spinuzzi notes that imbued in a tradition where design thinking and human-centred design prevail, the lack of extended and in-depth enquiry into the context of design will often mean that the designer's solution will prevail to the detriment of co-authored approaches whereby designer and user(s) join their efforts (Janzer and Weinstein 2016: 286).

This synergy will imply a shift in the curriculum, from the domain of the classroom or the studio to the wider world in which we seek to intervene. Some have in fact advocated for a design curriculum that is based on ‘collaborative learning’ - a term coined by social constructivism (Triggs 2016: 140). This collaborative process is no longer limited to collaborative processes between student and teacher, or even amongst students, it also extends to the wider world in which design seeks to intervene. In this instance, collaborative projects need to delve beyond research, design and intervention, they must also seek to evaluate the levels of impact (Janzer and Weinstein, 2014). The assessment of social design projects will, in our understanding, ensure that design students can gain the skills that are needed to address what Norman and Klemmer (2014) have identified as the “new societal challenges, cultural values, and technological opportunities”.

### CURRICULUM DEVELOPMENTS: DESIGNING ALTERNATIVELY

It is against this critical backdrop that we have sought to develop a socially and ethically engaged element of the Undergraduate Design degree curriculum at Edinburgh College of Art, which is part of the University of Edinburgh. Working on the ‘Designing Alternatives’ course and project for the past four years, we have discussed some of our findings in three earlier contributions (Gieben-Gamal and Matos 2015), (Gieben-Gamal and Matos 2016), (Gieben-Gamal and Matos in press). However, before exploring the implications of the debates that were presented in the previous section, it might be useful to outline the educational context we find ourselves in. The School of Design, within which we are situated, contains ten design programmes each of which has its own pedagogical approach. However, the school as whole prides itself on the technical skill and virtuosity of its students. In this scenario, student-led and collaborative projects are common in each of the programmes but the overarching educational model (with a few exceptions) is that of the apprentice system which places emphasis on technical ability and aesthetic literacy under the tutelage of accomplished practitioners. As discussed by Raein, (2005), and as with many other Art Colleges across Britain, the critical, theoretical and historical studies component of the degree programme is separated out from studio teaching and delivered by an independent department, based in the School of Design, through a series of core courses. The question as to whether this model of independent “contextual studies” – as it is often referred to – is preferable to an integrated model of studio and arts and humanities teaching has dominated debates about design education in the UK for many years (Steers 1989), and although it is not the primary focus of our paper it does have a bearing on the issues we will address.

That then is the broad backdrop to this paper. The more specific one, was our desire, as members of the

contextual studies department, known as ‘Design and Screen Cultures’, to develop courses that addressed contemporary social challenges. The social, cultural and political dimensions of design and visual culture have broadly structured all courses within the department but only one course, called ‘Designing Alternatives’, focused in its entirety on design’s overt responses to a range of contemporary social issues. Our intention with the course was to move away from the traditional lecture-seminar format that is common in arts and humanities teaching and to incorporate more active and reflexive approaches to learning.

This was partly in response to the observation that students tended to demonstrate a ‘cynical view’ (Biggs 1999: 15, 98-102) of courses based on a lecture format where the emphasis was on written performance and analysis of existing artefacts and projects, rather than on connecting the course material to their own activity as creative practitioners. Indeed, this resistance to lecture-based teaching, is perhaps amplified and understandable in an art college context in which students spend most of their time ‘learning by doing’, a process that generates tacit forms of knowledge (Cross 2007).

In 2014-15, we redesigned the ‘Designing Alternatives’ course to offer an opportunity for students to engage with active forms of learning (Burgoyne and Pedler 2008). In this case, we devised a syllabus that encouraged active forms of learning with communities that were external to the college. Our aim was to offer students the opportunity to conduct grounded fieldwork that involved key stakeholders in the discussion of a societal challenges that they wished to address through their research and practice. The participatory approach to research became particularly relevant in guiding our efforts. It is important to note that the participatory model builds on social sciences’ model of active research and is in line with the work developed by social scientist Kurt Lewin, who:

believed strongly in democratic decision-making, a more equitable distribution of power, and that practical problems were a never-falling source of ideas and knowledge (Wals 1994:164).

Moreover, Lewin believed that target groups could act as experts in the resolution of problems that affected them directly (Wals 1994:164); something that would be achieved in conversation with the researchers. It is worth noting here that perhaps what distinguishes participatory research from participatory design is that participatory research is actively engaged with ‘social transformation’ as a goal of research itself. In fact, participatory research recognises a plurality of knowledge systems that are valid and essential to our understanding of the social world, it is therefore not surprising to find that the motto ‘nothing about us without us’ (Nind 2011) will often guide the work of those who align with participatory research. In fact, researchers who advocate participation also see its

importance in voicing marginalised communities as well representing epistemologies and worldviews that are largely unrepresented (Aldridge 2015). Participatory research is, thus, more than a set of methods; rather it represents an ‘orientation to research’ that goes beyond a set of prescribed theories, methodologies and methods. Nonetheless, participatory research tends to cluster around mixed methods approaches that are mostly qualitative (Bergold and Thomas 2012:192 referring to Reason and Bradbury 2008).

Drawing on participatory research, the new course was now structured around four two-hour lecture sessions, which introduced: the themes of the course; research methods (such as interviews, diary studies and direct observation and participation); and ethical practices, with the remaining time dedicated to real-life projects based in Edinburgh. Our community groups were two primary schools and Capability Scotland, a charity working with disabled people across Scotland. In all three cases the initial ‘client briefs’ were closely related to the overall ethos of the course – to use design to tackle social issues. To further ‘align’ (Biggs 1999:27) the ‘Designing Alternatives’ course we decided that the assessment strategy would rely on a final submission of a 3,000-word report in line with a fieldwork diary used by ethnographers and design ethnographers alike (Emerson 2011). This format was intended to encourage students to present and discuss their research, findings, and initial design proposals as well as to provide their own self-reflective thoughts on the process. In the report both secondary literature and primary sources – largely based on interviews, direct observation and informal conversations – were to be used critically to support the student’s discussion and ideas.

Our attempt to revise the course aims, scope, and structure as well as teaching and learning activities was not only fueled by our reflections on the participatory research literature and the discourses on social design but also by the literature on *critical pedagogy*, often seen as one of the ‘pillars’ of other derivatives of participatory research (see for example the Community-Based Participatory Research paradigm), namely the work of pedagogue Paulo Freire (Blumenthal 2011). The work of John Dewey was likewise at the forefront of our thinking. Though living decades apart, both were adamant critics of the ‘banking’ concept of education that takes for granted the idea that students are empty vessels waiting to be fed information that can be easily memorised and regurgitated.

While Dewey’s (1915) ideas were formed over a century ago, his advocacy of active forms of learning still provide a powerful argument for more meaningful learning experiences. The relevance of Paulo Freire’s philosophy is likewise, no less relevant today than when first published, with his emphasis on the role of education in tackling issues of social justice and change, a process that not only has the potential to emancipate the learner but also society at large (Freire 1996).

Qualities that are in line with the “development of [a] critical being” (Mann 2001, referring to Barnett 1994, 1997 and Brockbank & McGill 1998) – a process that facilitates the learner’s capacity to “take on the role of active agent in society” (Mann 2001: 7). All of this struck a chord in the face of current social, economic and ecological challenges and the on-going pressure for universities to fulfil their economic duties as opposed to social ones (McArthur, 2011).

In line with the educational literature (Huxham *et al.* 2008), we concluded the course by inviting the students to reflect-back on their learning and provide feedback about the course design from which two key points came to light. Firstly, the feedback confirmed what we suspected from the graded reports: that the students had achieved deep forms of learning (Biggs 1999:16-18) that moved beyond the specific graded exercise to a wider reflection on their ways of working, which was supported by the focus on process as much as on the end-product. Secondly, that the most challenging aspect of the course for the students was the shifting nature of the design brief which was set in conversation with the community groups, each of whom had little experience of working with designers. This challenge was also influenced by students’ inexperience with participatory research whereby research questions develop in conversation with a target group (Bergold and Stefan 2017: 192). For our own part, we noted two further points: one was that while many students had achieved a high degree of contextual understanding, taking into account theoretical issues as well as practical ones, there were still weaknesses in this area specifically around questioning normative assumptions and critically reflecting on their own subject positions and those of their project partners. Finally, the students found it challenging to step out of the role of ‘expert’ and work in fully collaborate ways with their community partners. That is, at times, they continued to perpetuate the model of research ‘for’ rather than research ‘with’ their project partners.

In response, the following year we refocused the course again: this time taking one theme – disability – and invited the students, in groups, to identify and develop their own design project either with an identified community partner or as a speculative proposal for an identified group / community. The aim was to enable the students to gain a greater critical understanding of the issues they were tackling before they embarked on developing their design briefs. While this was delivered initially through lectures, we also invited a PhD student at ECA, George Low, to come and discuss his own research (on disability and music), as well as his personal experiences as a disabled man, at the start of the course and then again at the midpoint to take part in work-in-progress presentations. While aware that we had resorted to the lecture mode to deliver theoretical and contextual content, the combination of this with participatory modes of learning seemed to overcome the students’ traditional scepticism towards this method of

learning (indeed some students had requested more lecture content in the previous iteration of the course) and the combination proved more effective in achieving greater understanding of the theoretical underpinnings of seemingly ‘innocent’ or ‘neutral’ design strategies. The decision to allow students to set and develop their own design briefs also resulted in highly motivated and engaged work.

While the standards of applied thinking and analytical skills demonstrated by students taking the course more than met the expected standards for an undergraduate Year 3 course and in many cases far exceeded this, our nagging concern remained about the model of design that was being reproduced, despite our efforts to introduce a more critically informed and reflexive approach that took the participatory research model as a key structuring principle. One ‘problem’, indicative of a wider issue within the design profession outlined by Don Norman (2010), was the way in which the students like practicing:

[d]esigners often fail to understand the complexity of the issues and the depth of knowledge already known. They claim that fresh eyes can produce novel solutions... Fresh eyes can indeed produce insightful results, but the eyes must also be educated and knowledgeable.

Norman’s proposed solution is to include more extensive social science training within design education but this perhaps belies the complexity of the task involved. What aspects of social science training should be core to design training, for example? Likewise, how might an undergraduate design degree encompass the full range of disciplines (and their theoretical foundations) necessary to have an informed understanding of the highly complex social, economic, political or environmental issues that students may be asked to address in their design careers? One approach, as outlined above has been to focus on the adaptation of social science methods, such as ethnography and fieldwork methods, as is illustrated by ‘design thinking’ and ‘design science’ and as promoted by Norman (2010) in his call to focus on “training in science, the scientific method, and experimental design”. However, as we noted earlier this can result in a severing of these methods from their theoretical and ethical contexts and epistemological foundations (Janzer and Weinstein 2016) (Spinuzzi 2005). With only few exceptions (Dalsgaard, Dindler and Fritsch 2013), as we noted earlier, much of the literature on design education and the ‘social’ or ‘ethical’ turn is striking in its focus on methods and relative silence on issues relating to theory or methodology. Given this, the question must be asked: how can students be expected to apply methods in a rigorous way if their understanding of the subject matter they are investigating is divested of theory and /or with real and genuine knowledge of the communities they wish to support?

In answer to this we would propose an approach to design education that places participation, involvement, theory and criticality at its centre and from which methodology and subject knowledge can emerge in a way that reconnects design, social change and ethics. Core to this is the notion of situated knowledge (Haraway 1988), and by extension situated practices (Janzer and Weinstein 2016) (Simonsen *et al.* 2014), which not only connects to the participatory research model but also acknowledges that knowledge is partial and fluid, that it is intimately tied to power, and that it is shaped by the context in which it is produced and by whom. As well as forming the epistemological basis of our approach to our design courses, this understanding of knowledge also goes some way to address the practical limitations of a design degree, which will never be able to encompass all the complex subjects and related issues that students might encounter in their professional careers, by equipping them with the ability to critically engage with new knowledge and the process of knowledge acquisition in a reflexive manner.

This is not to say that specific subject based theories should not also be taught; this is also vital. For example, students taking the ‘Designing Alternatives’ course that focused on design and disability were introduced to different theoretical models of disability and key issues in disability studies. However, what we realised on concluding the course is that if students are also equipped to take a reflexive approach to learning and understand knowledge to be partial, fluid and contextual then they may be less likely assume a position of expertise and will be more mindful of their own limitations, while also recognising the ‘expertise’ or ‘situated knowledge’ of those they collaborate with. As such they may also be less likely to reproduce the heroic model of design that is still so prevalent in art school education and the design profession.

A second core structuring theory is that of social constructionism (which can in turn open-up to further key theoretical positions such as post-humanism) and how this can be used to critique normative representations and values that often pervade public discourse, including design discourse. Connected to these two foundational theoretical approaches is the idea of critical pedagogy as noted earlier and its influence on the development and application of participatory research. Finally, in keeping with Janzer and Weinstein (2016) we would argue that much more of the design curriculum should focus on understanding the context in which the design activity might take place and how the issues might be ‘framed’ so as to enable students to open up conversations with stakeholders in a critically informed way. If this can be achieved, this process can provide transformative effects for both communities and students.

Several design educationalists have drawn on Donald Schön’s seminal text, the *Reflective Practitioner* (Schön 2008). In connection with this and Cross and Dorst in particular have outlined how problems and solutions

should co-evolve (Kimbell 2011:292) (Dorst 2008). However, Cross and Dorst, like Schön before them still tend to place too heavy an emphasis on the individual researcher and their abductive reasoning rather than on the co-construction of the framing process by all participants, something that is key to participatory research. In line with the argument that there needs to be a ‘de-centring’ of the designer (Ehn 1989) (Suchman 1994) we would, therefore, propose an approach to framing that follows the participatory research model proposed above, which is similar to the model of situated design practices promoted by Simonsen and colleagues who ask: “What is the relation between the analysis of the situation and the resulting design solution? Questions such as these are difficult to answer, and they call for methodological considerations” (Simonsen *et al.* 2014:2).

We would agree that these methodological considerations are vital. But, if students are going to “integrate field specific knowledge with a larger understanding of the human beings for whom design is made”, as Ken Friedman (2002: 290-10) argues, students will need to have some grounding in the theoretical models that might impact the situated context that they are engaging in. This became abundantly clear when dealing with the subject of disability as students struggled with language as well as stereotyped notions of disability at the outset of the course which led to an unconscious adoption of the medical model of disability that “views all disability as the result of some physiological impairment due to damage or to a disease process” and that therefore excludes a view of disability that is ‘socially constructed’, as Llewellyn and Hogan (2000: 158-59) would contend.

Without formal introduction to the different models of disability drawn from disability studies literature it is not at all certain whether the students would have recognised in themselves these unconscious ‘biases’ which would have impacted the nature of the design work undertaken by them. Indeed, Lucy Kimbell (2011) likewise argues that designers should pay closer attention to ways of knowing and thinking and how researchers’ or indeed students’ situated knowledge frames their understanding of context and the people they are working with.

## CONCLUSION

In this contribution, we have attempted to highlight the ever-growing presence of a socially engaged design practice within higher education. We hope we have also made it clear that this presence has mostly affected the practice of design itself, perhaps leaving behind the role that design research might play in tackling social issues. The direct involvement and participation of communities has played an important role in design education and practice, however, this participation has been mostly directed towards the design of tangible and material outputs. Using research to directly engage and transform communities is relatively new. The same

might not be said for other disciplines where participatory research has decisively influenced their development and scope of intervention and practice. We feel that the design disciplines that are engaged in social transformation have much to learn from other disciplines and from the participatory research literature at large.

We have also argued that participatory forms of research have the potential to transform not only communities and actors but also students themselves. We have also shown that this transformation has an impact on the ‘depth’ of learning that is achieved through direct engagement with specific social contexts. Perhaps more daring is our attempt to question the heroic model of design as we encouraged students to co-construct research questions and briefs with the communities they wished to address - a process that largely challenges the authorial voice of the designer, so common in the creative sector.

Looking at the curriculum more specifically, we also put forward the argument that a social design curriculum should avoid approaching complex social briefs through a pick and mix fashion where methods are combined and used without a greater reflection on the epistemologies and methodologies that underpin them. Perhaps resembling a post-positivist approach to the production of knowledge, visible in the work produced by feminist researchers (Hesse-Biber, 2012), we have urged the community of design educators to contemplate the importance of teaching research methods in contextually informed ways. Through this, we intend to convey the importance of understanding the philosophical, social, political and even ethical implications of the methods and approaches to research that we wish to employ as we encourage design students to conduct socially engaged projects.

## REFERENCING

- Aldridge, J. (2015) ‘Participatory Research: Working with vulnerable groups in research and practice’, *Disability & Society*, 7599 (August), pp. 8-10.
- Behren, R. (2003) ‘Teaching as a Subversive Inactivity: The responsible design teacher’, in Heller, S. and Vienne, V. (eds.) *Citizen Designer: Perspectives on Design Responsibility*, New York: Allworth Press.
- Bergold, J. and Stefan, E. (2017) ‘Participatory Research Methods: A Methodological Approach in Motion’, *GESIS - Leibniz Institute for the Social Sciences*, 37(4), pp. 191-222.
- Bergold, J. and Thomas, S. (2012) ‘Participatory Research Methods: A Methodological Approach in Motion’, *Forum: Qualitative Social Research*, Berlin, 13(1), N/a.
- Biggs, J. (1999) *Teaching for Quality Learning at University*, Maidenhead: Society for Research into Higher Education, Open University Press.

- Blumenthal, D. S. (2011) 'Is Community-Based Participatory Research Possible?', *American Journal of Preventive Medicine*, 40(3), pp. 386-389.
- Burgoyne, J. and Pedler, M. (2008) 'Action Learning', in Reason, P. and Bradbury, H. (eds.), *Handbook of Action Research: Participative inquiry and practice*. London: SAGE Publications, pp. 319-332.
- Cross, N. (2007) *Designerly Ways of Knowing*. London: Springer.
- Dalsgaard, P., Dindler, C. and Fritsch, J. (2013) 'Design Argumentation in Academic Design Education', *Nordic Design Research Conference 2013*, pp. 426-429.
- Dewey, J. (1915) *Schools of To-morrow*. Edited by E. Dewey. London: Dent.
- Dorst, K. (2008) 'Design Research: A revolution-waiting-to-happen', *Design Studies*, 29(1), pp. 4-11.
- Ehn, P. (1989) *Work-Oriented Design of Computer Artifacts*. Second ed. Stockholm: Stockholm: Arbetslivscentrum.
- Emerson, R. M. (2011) *Writing Ethnographic Fieldnotes*. Second ed. Edited by R. I. Fretz and L. L. Shaw. Chicago: The University of Chicago Press.
- Findeli, A. (2001) 'Rethinking Design Education for the 21st Century: Theoretical, Methodological, and Ethical Discussion', *Design Issues*, 17(1), pp. 5-17.
- Freire, P. (1996) *Pedagogy of the Oppressed*. New Revised. London: Penguin Books.
- Friedman, K. (2002) 'Towards an Integrative Design Discipline', in *Creating Breakthrough Ideas: The collaboration of anthropologists and designers in the product development industry*. Westport, Conn: Bergin and Garvey.
- Gieben-Gamal, E. and Matos, S. (2015) 'Think Play': *Using grassroots movements as educational opportunities*. National College of Art and Design Dublin, 7-9 November. Cumulus Working Papers Dublin 31/13, pp. 12-15.
- Gieben-Gamal, E. and Matos, S. (2016) 'Designing Alternatives', in Resnick, E. (ed.) *Developing Citizen Designers*. Bloomsbury Academic.
- Gieben-Gamal, E. and Matos, S. (in press) 'Design and Disability: Developing new opportunities for the design curriculum'. Sapienza University of Rome, 12-14 April. EAD'2017: 12th European Academy of Design Conference.
- Haraway, D. (1988) 'Situated Knowledges: The science question in feminism and the privilege of partial perspective', *Feminist Studies*. College Park, Md., 14(3), p. 575.
- Hesse-Biber, S. N. (ed.) (2012) *Handbook of Feminist Research: Theory and praxis*. Second ed. Thousand Oaks, California: SAGE Publications.
- Huxham, M., Laybourn, P., Cairncross, S., Gray, M., Brown, N., Goldfinch, J. and Earl, S. (2008) 'Collecting student feedback: a comparison of questionnaire and other methods', *Assessment & Evaluation in Higher Education*. Routledge, 33(6), pp. 675-686.
- Janzer, C. L. and Weinstein, L. S. (2014) 'Social Design and Neocolonialism', *Design and Culture*, 6(3), pp. 327-343.
- Janzer, C. and Weinstein, L. (2016) 'The Citizen Designer: a cautionary note', in Resnick, E. (ed.) *Developing Citizen Designers*. Bloomsbury Academic.
- Jones, H. and Lundebye, A. (2015) 'Designing Learning Scenarios for Futures of Sustainability', *Nordes 2015: Design Ecologies*, 6(6), pp. 1-2.
- Kimbell, L. (2011) 'Rethinking Design Thinking: Part I', *Design and Culture*, 3(3), pp. 285-306.
- Llewellyn, A. and Hogan, K. (2000) 'The Use and Abuse of Models of Disability', *Disability & Society*. Taylor & Francis Group, 15(1), pp. 157-165.
- Mann, S. J. (2001) 'Alternative Perspectives on the Student Experience: Alienation and engagement.', *Studies in Higher Education*, 26(1), pp. 7-19.
- Margolin, M. (2016) 'Teaching Social Literacy', in Resnick, E. (ed.) *Developing Citizen Designers*. Bloomsbury Academic.
- McArthur, J. (2011) 'Reconsidering the Social and Economic Purposes of Higher Education', *Higher Education Research and Development*, 30(6), pp. 737-749.
- Moreira, M. (2015) 'Distinct Approaches to Design Education: Preparing Future Designers for an Amplified Practice of Design', in *Nordes 2015: Design Ecologies*, pp. 1-6.
- Nind, M. (2011) *What is participatory research?*, *SAGE Research Methods*. London.
- Norman, D. and Klemmer, S. (2014) 'State of Design: How Design Education Must Change'. Available at: [http://www.jnd.org/dn.mss/state\\_of\\_design\\_how.html](http://www.jnd.org/dn.mss/state_of_design_how.html) (Accessed: 30 May 2017).
- Norman, D. (2010) 'Why Design Education Must Change'. Available at: <https://tinyurl.com/ybdnp2nu> (Accessed: 3 February 2017).
- Raein, M. (2005) 'From Practice to Reflection and on to', *Nordic Design Research Conference*.
- Resnick, E. (ed.) (2016) *Developing Citizen Designers*. Bloomsbury Academic.
- Schön, D. A. (2008) *The reflective practitioner: how professionals think in action*. New York: Basic Books.
- Shea, A. (2016) 'Anatomy of the Socially Responsible Designer', in Resnick, E. (ed.) *Developing Citizen Designers*. Bloomsbury Academic.

Simonsen, J., Svabo, C., Strandvad, S. M., Samson, K., Hertzum, M. and Hansen, O. E. (2014) *Situated Design Methods*. Cambridge, Mass.: The MIT Press.

Spinuzzi, C. (2005) 'The methodology of participatory design (APPLIED THEORY)', *Technical Communication*, 52(2), p. 163.

Steers, J. (1989) 'Art, Craft, and Design Education in Great Britain', *Art Education*, 42(1), pp. 6–11.

Suchman, L. (1994) 'Working Relations of Technology Production and Use', *Computer Supported Cooperative Work (CSCW)*. Dordrecht, 2(1), pp. 21–39.

Triggs, T. (2016) 'Collaborative Learning: the social in social design', in *Developing Citizen Designers*. Bloomsbury Academic.

Wals, A. (1994) 'Action Research and Community Problem-Solving: Environmental education in an inner-city', *Educational Action Research*. Taylor & Francis Group, 2(2), pp. 163–182.