Chapter 20
Design Education and Institutional Transformation

Dean Bruton
Southern Cross University, Australia

ABSTRACT
This chapter aims to develop awareness of the changing characterization of design and design education in response to the impact of global crisis and the ongoing introduction of innovative computational design methods and technologies. This chapter presents a strategic vision that includes a range of major concerns in relation to design education’s learning and teaching needs in higher education. The purpose of the chapter is to reconsider the foundation and consequent assumptions required of a vital relevant design education in the 21st century. It reflects on a general academic reassessment of the nature of design education in the light of the impact of computational methods and technologies and asserts a need for the re-envisioning of design education pedagogies in terms of networked interaction and global issues. Specifically it maintains that computational methods and techniques and the institutional adoption of interaction as a key factor in education has transformed the conception and construction of content as well as the delivery of communications across the broad spectrum of both the arts and sciences. It acknowledges the theory of institutional transformation, explores the evidence for such a theory, and discusses design education’s potential pedagogical strategies for reform of higher education.

INTRODUCTION
The general perspective of this chapter describes the change in characterization of design in response to global crisis and rapid digital technological developments. Design education is viewed as needing radical revision in light of the failure of the modernist and postmodernist agenda and the emergence of a heuristic understanding of the nature of institutional transformation. Humanitarian concerns together with technological innovations initiate and drive changes to notions of design, methods and techniques for design pedagogy and goals of design practice. Furthermore documented analysis of institutional change suggests a need for improved educational understanding and utilization of design across the broader spectrum of all programs of study. While space constraints preclude systematic empirical assessments of this
new framework, the penultimate section offers a brief illustrative application to the study of design education reform guided by lessons learnt from social revolutions, the most dramatic types of institutional change.

BACKGROUND

In the last decade the digital revolution has changed the characterization of design from a relatively narrow discipline-based study to a study of a range of design related interdisciplinary concerns. Julka Almquist and Julia Lupton state, “Design research has no single definition. It is an interdisciplinary form of inquiry categorized in multiple ways, including: Research with a focus on theory, practice, and/or production, as design epistemology, design praxiology, and design phenomenology, and humanities-based design studies” (Almquist and Lupton 2009). As Nigel Cross and others document how design theorists have been searching for ways to expand the understanding and incorporation of design into other programs of study (Cross 2001). In 2007, the OECD reported that 34% of Australians aged 25-64 years had a tertiary education, ranking it the seventh highest (equal with Norway) amongst the 30 OECD member countries, and six percentage points above the OECD average (28%) (Australian Bureau of Statistics, 2010). Canada, Japan, New Zealand and USA respectively outranked Australia. Is tertiary education today adequate for the design challenges of global crisis?

In 1996 a significant review of design education at a two day workshop called Design@2006 recommended that the then design education of tomorrow should have a content focus on new thinking, research projects, and other activities that inform the education of new breed of designer and that a symposium on Design Education was to be held annually. Distance learning and interactive technology are key growth areas. Krippendorf in a 1997 report called ‘Design in the Age of Information’ (Krippendorf 2008) noted four topics surfaced: Rising technological opportunities, new design principles, design education, and a list of key research issues. Both Cross and Krippendorf include Herbert Simon’s definition of design: “The natural sciences are concerned with how things are...design on the other hand is concerned with how things ought to be” (Simon 1969). New design principles were boldly announced: “Design principles are propositions whose truth does not lie in the past but in their ability to guide actions towards desirable futures” (p27). Change fronts for design education at that time (1997) were in sum:

- Academia needs more collaboration
- Change in thinking of companies and institutions and grant programs
- Human-centered design – “that departs from our traditional objectivism” (Krippendorf 2008, p30)
- Collaborative environments (real and virtual)
- Interdisciplinary team work
- Reflective practice
- New boundaries exploration

The needs for action to occur were resources for equipment, digital links, and faculty student research. Optimistically, the call was put out in the final sentence of the report for a next step to be taken by visionary leaders within schools, government, design forums and companies (p37). In one larger working group that dealt specifically with design education a recognition of the changes required surfaced; “The participants of our discussion group agreed on the need for quite radical changes in current design curricula, pedagogies, and academic structures” (p57). The discussion in sum suggests the following actions:

- Addition of design drawing to the ‘three Rs’ (Reading, Writing and Arithmetic) in the guide of Planning, Creating and Visualising
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