Design School: Design Education in the Age of Digital Capital

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Abstract: Design, we are often reminded, has a direct social purpose that is capable of reaching all sectors of public life. National design organisations across the world proclaim that design acts reflect a nation’s social and cultural values; design shapes the everyday products people use, the buildings we live, work and play in, and the clothes we wear. Furthermore, design communicates those values to others. It is therefore an extremely powerful tool that can communicate and express a nation’s values to others and has a significant role in the social, cultural and economic wellbeing of its people (Newman and Swann, 1996). Moreover, it has been suggested that design is the best tool that we have available to us to make sense of the contemporary, complex modern world (Sudjic, 2009). But how should a design school in the age of digital capital best prepare future designers for this complex world? How can the design school maximize the potential opportunities suggested by this future, uncertain world? Can the design school truly help address some of the emergent and huge global issues we will surely face? By looking at the contemporary situation this paper explores how the structure of design education has been transformed by a number of internal, external, and contextual factors. The paper will expand upon the operative scope, flexibility, and vulnerability of teaching design, its history/theory, and representation in the years and decades ahead in the design school.

Keywords: Design School, Design Education, Irresponsible, Undisciplined.

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Introduction

This paper sets out to explore the nature of the contemporary design school from a global perspective and to examine the rich and diverse situations that exist in design production, both in theory and practice, and the character of the studio/history/theory interplays that prevail in contemporary design school life. It is generally acknowledged that any advance in design education should have a direct impact on the conditions of the world around us. Poul Rind Christensen, head of research at Kolding School of Design, Denmark, for example, considers design researchers’ interactions with practitioners to be crucial for the capacity of design research to make significant contributions towards innovation in society. Christensen believes that “In the design school of the future, researchers are not just distant observers of that which exists but creative co-designers of a new practice.” (Christensen, 2010).

Design schools, we are told, are at the forefront of shaping a new generation of creative managers and entrepreneurs (Woyke and Atal, 2012). Design schools throughout the world play a growing role in supplying these highly sought-after people to corporate and non-profit organizations alike. The driving forces of innovation and globalization are pushing many companies to hire design school graduates with new skills and design schools across the world that teach design thinking with its emphasis on maximizing possibilities rather than managing for efficiency are in high demand. In this era of constant change, many of these companies want people who are comfortable with complexity and uncertainty and many of these individuals are to be found in design schools.

Any design school of the future, however, must first acknowledge that we collectively create things that nobody wants anymore. Moreover, a design school needs to recognize that we are destroying some of the most important features of society that we claim to hold most dear (i.e. our planet, our society, and our spirit). Our ecological crisis, wherein we continue to deplete and degrade our natural capital on a massive scale, using up the equivalent of 1.5 planets to meet our current consumption has resulted in one third of our agricultural land disappearing over the past 40 years, which will inevitably lead to food supply crises and an anticipated doubling of food prices by 2030. Our current social crisis sees nearly 2.5 billion people on our planet live in abject poverty. There have been many successes at lifting people out of poverty, but this figure has not changed much over the past few decades. Furthermore, the world is currently in a spiritual crisis where, according to World Health Organization (WHO) statistics, 3 times as many people die from suicide as die from homicide or in wars. Although we are currently experiencing a number of wars across the world, 3 times more people kill themselves than kill others. This inner crisis also manifests in many other forms including rapidly growing figures for burn out and depression that both indicate an increasing gap between our exterior activities and our interior sources of creativity and presence. These three dimensions of collectively creating results that nobody wants constitute the most significant failure of our time.

Universities, Design Schools, and their Purpose

Before we examine the nature and role that contemporary design schools play presently and might play in the future, it is important to contextualise their genesis. Many design schools, today, now operate within the organizational constraints of a much larger institution such as a university. A University, from the Latin word universitas (the whole), as we now recognise it is an educational institution designed
for instruction, examination, or both, of students in many branches of advanced
learning, conferring degrees in various faculties, often embodying colleges and similar
institutions. Stefan Collini, Professor of English Literature and Intellectual History at the
University of Cambridge, lists four characteristics of a modern university:

- That it provides some form of post-secondary school education, where
  “education” signals something more than professional training.
- That it furthers some form of advanced scholarship or research whose
  character is not wholly dictated by the need to solve immediate practical
  problems.
- That these activities are pursued in more than just one single discipline or very
  tightly defined cluster of disciplines.
- That it enjoys some form of institutional autonomy as far as its intellectual
  activities are concerned (Collini, 2012).

The earliest universities, in the Western world, were developed under the aegis of
the Latin Church in Christian cathedral schools or monastic schools (Scholae
monasticae), dating back to the 6th century AD (Riché, 1978). From the 12th century
onwards, the rise of cities and the rise of universities occurred together and the model
universities of Bologna and Paris were followed by Oxford and Salamanca (1219),
Naples (1224), Prague (1347), Krakow (1364), Leuven (1425) and Glasgow (1451). The
eminent historian, Peter Burke, states that around this time it was assumed that
universities concentrate on transmitting knowledge as opposed to discovering new
knowledge (Burke, 2000). Likewise, the opinions and interpretations of the great
scholars and philosophers like Aristotle, Aquinas and so on were considered irrefutable
and could not be equalled and the task of the teacher was merely to expound the views
of the great scholars of the past. At this time the only disciplines that could be studied
officially were the seven liberal arts of grammar, rhetoric and logic (the Trivium) and
mathematics, geometry, music, and astronomy (the Quadrivium), and postgraduate
courses in medicine, theology, and law.

It would not be for over 450 years from the rise of the universities and cities of the
later Middle Ages that the first formal design school, the Bauhaus, would appear and
open its doors for the first time. The Bauhaus, with its roots in the Kindergarten system
of educating young school children perfected by Friedrich Froebel (1782 - 1851), gave
rise to a number of “Masters” including Johannes Itten, Josef Albers, and Paul Klee.
These individuals and others infused the Bauhaus’ revolutionary Vorkurs programme of
abstract-design activities, with an emphasis that owed a substantial debt to Froebel’s
Kindergarten system. In 1919 Walter Gropius was appointed head of the Bauhaus in
Weimar, the then German capital. One of Gropius’ key objectives was to integrate art
and economics, and add an element of engineering to art. As such, students at the
Bauhaus were trained by both artists and master craftsmen in an attempt to make
“...modern artists familiar with science and economics, [that] began to unite creative
imagination with a practical knowledge of craftsmanship, and thus to develop a new
sense of functional design.” (Bayer et al., 1952: 13). The initial aim of the Bauhaus was
to “...rescue all of the arts from the isolation in which each then found itself.” (Whitford,
1984: 11) and to encourage the individual artisans and craftsmen to work cooperatively
and combine all of their skills. The Bauhaus also set out to elevate the status of crafts to
the same level enjoyed by fine arts such as painting and sculpting. Ultimately, the goal
was to maintain contact with the leaders of industry and craft in an attempt to gain
independence from government support by selling designs directly to industry.
Universities, Design Schools, and the Present Situation

The world we inhabit today is an increasingly complex and interdependent one; it is a world where the majority of society’s big issues are not isolated to one particular sector or discipline; it is often said that we will not resolve these issues with the knowledge and thinking we used to create them in the first place. Typically, these issues can be characterised as emergent phenomena with non-linear uncertainties. Manuel Castells, a leading sociologist of the city and new information and media technologies, in his three-volume work on “The Information Age: Economy, Society, and Culture” (Castells, 1996; Castells, 1997; Castells, 1998) believes three parallel fundamental changes are taking place:

- The rise of a new, dominant social structure – the network society;
- The rise of a new economy – the informational economy;
- The rise of a new culture – the culture of virtual realities.

It is very difficult to predict how these significant developments will play out in detail over the coming years, but we can identify a number of ways these changes are challenging leaders and policy makers in universities and other organizations including design schools (Senge and Käufer, 1999). These challenges, frequently grouped together under the term “new economy,” are fundamentally redefining the design industry today:

- **Space**: the globalization of value creation, capital markets, and financial markets.
- **Time**: Internet speed as an essential condition for competitive strength.
- **Structure**: the primacy of networked structures and communities.
- **Substance**: digitalization accelerates the dematerialization of value creation.
- **Competition**: “winner takes all” markets (increasing returns) as the dominant form of competitiveness.

These five developments redefine the basic assumptions regarding **time** (instantaneous, any time), **space** (anywhere), **structure** (network), **substance** (digitization) and **competition** (increasing returns) under which the agents of design – consumers, businesses, investors – proceed and operate. These shifts combined have transformed fundamentally the way a designer’s services are now funded, the manner in which a designer now works, and how the digital has transformed the manner in which we design, produce, distribute, and consume goods.

Claus Otto Scharmer, founding chair of the Presencing Institute at Massachusetts Institute of Technology, has written extensively on the failure of our contemporary institutions including our universities. Scharmer (Scharmer and Käufer, 2000) believes that the knowledge disseminated by many universities nowadays has becomes less and less relevant to leaders in organizations, and that the knowledge which is relevant is increasingly disseminated by institutions other than universities. Furthermore, Scharmer states the core of teaching at universities has less and less to do with the challenges characterizing praxis and that the kind of knowledge needed for thriving in the “new world” is almost absent from university classrooms.

The present situation in design and other related industries reveals a number of stark facts. In the “new economy”, many highly successful entrepreneurs are not university graduates. These individuals often quit university in order to establish a
company of their own. Similarly, in the UK, more than half of the designers practicing in the UK do not have a formal qualification in design (Design Council, 2010). This seems to show that many of the key competencies and knowledge required for success in praxis are not acquired at universities.

### A Manifesto for the Design School of the Future

As has already been stated, the knowledge disseminated by many universities today is less and less relevant to society, and that knowledge which is relevant is increasingly disseminated by institutions other than universities. The core of teaching at universities has less and less to do with the highly complex challenges we now face and the types of knowledge needed in the modern world is absent from most university classrooms.

#### Table 1. Phases of University Evolution (after Scharmer and Käufer, 2000).

<table>
<thead>
<tr>
<th>Concept of University</th>
<th>Teaching</th>
<th>Research</th>
<th>Praxis</th>
<th>Dis-Unity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medieval scholastic university: “Unity of Teaching”</td>
<td>Study by lecture “co-listening,” “co-thinking”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Humboldt’s classical university: “Unity of Research and Teaching”</td>
<td>As above, plus seminar style studies “co-speaking”</td>
<td>The individual researcher “in solitude and freedom”; Institutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21st century university: “Unity of Praxis, Research and Teaching”</td>
<td>As above, plus infrastructures for “co-initiating”, “co-creating”, and “co-entrepreneuring”</td>
<td>Action Research; Research consortia Clinical Research, Community Action Research,</td>
<td>Strategic co-creation with companies, consortia, venture capitalists, business incubators</td>
<td></td>
</tr>
<tr>
<td>21st century altermodernity: “Dis-unity caused by Market Politics and Globalisation”</td>
<td>Un-cooperative</td>
<td>Productively irresponsible action</td>
<td>Production without a product</td>
<td>What has to be done? How can I explain to myself what I am already doing/not doing?</td>
</tr>
</tbody>
</table>

Humboldt’s university reform postulated a “unity of research and teaching” that shifted the focus from the dissemination of a given body of knowledge to the research process that underlies the generation of the knowledge base (Humboldt, 1990). This expanded concept of the university opened the view toward the process of knowledge genesis and, at the same time, changed the nature of university teaching. While the scholastic lecture involves the students as listeners (“co-listening,” “co-thinking”), the
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seminar-style class engages students as partners in dialogue and discussion, as “co-speakers” rather than mere “co-listeners” (Table 1).

In the currently unfolding phase of the university’s evolution, another shift is taking place. The development of the modern university shifted the dominant perspective from knowledge dissemination to knowledge research. Now the focus is on the generative conditions of praxis that determine the contextual conditions of research processes. Knowledge creation is no longer based on researchers reflecting in solitude and freedom, but on the co-creation of praxis. However, governments and markets are actively reshaping what we perceive of the thing called the university. And what was always a trickle of complaint about the domestication of the modern university post 1968, has become a flood of books, reports, opinions and editorials, public admonishments, proposals and counter-proposals, new methodologies (including the new deal for massive open online courses through new consortiums like Coursera, Udacity, and edX), and free ‘universities’ begun in protest such as the Free University of Liverpool1 all questioning the future project of the university. This deluge of complaint is symptomatic of what Nicholas Bourriaud calls the altermodern condition (Bourriaud, 2009) in which we propose the concept of the university as now one of dis-unity caused by market politics and globalisation. For example, the value-for-money learning environment generally depicts the business of teaching as un-cooperative. And since praxis is now measured in the production of nothing we argue below that the researcher now needs to be productively irresponsible (Rodgers and Bremner, 2011). However, in this phase of the university Boris Groys reminds us “Every contemporary subject constantly asks these two questions: What has to be done? And even more importantly: How can I explain to myself what I am already doing? The urgency of these questions results from the acute collapse of tradition that we experience today” (Groys, 2012: 1).

In an earlier paper, the authors proposed that the generation of new knowledge in design praxis can now only manifest what we identify as undisciplined design and while it might be the manifestation of design without discipline, for research to be recognised, it might also require a new type of researcher/practitioner; someone finding their own way through the muddle of what were once labelled the design disciplines, and for whom not knowing is an invaluable aid to getting through it – i.e. getting it out while getting through it. As the fragmentation of distinct disciplines has shifted creative practice from being “discipline-based” to “issue- or project-based” (Heppell, 2006), we maintain that the researcher, who purposely blurs distinctions and has dumped methods, from being disciplined to being irresponsible, will be best placed to make connections that generate new ways to identify “other” dimensions of design research, activity and thought that is needed for the complex, interdependent issues we now face. The digital has modified the models of design thought and action, and as a result research and practice should transform from a convention domesticated by the academy to a reaction to globalisation that is yet to be disciplined. Thus, in these conditions designers and artists should be encouraged to apply themselves irresponsibly.

Scharmer (2011), head of the Presencing Institute at Massachusetts Institute of Technology, posits that the old way of solving problems has crumbled, decayed, and exhausted itself and he believes we must find new ways of regenerating our social

1 http://thefreeuniversityofliverpool.wordpress.com/
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fabric that in many places has fallen apart. Scharmer believes the core of the challenge is to awaken and increase creative cognitive human ability as it relates to seeing, sensing, mobilizing and bringing the future to fruition. The ability to visualize and enable creative imagination, inspiration, and intuition is the decisive factor in today's multi-layered and super-complex world (Jaworski and Scharmer, 2000), which constitutes a third kind of knowledge outlined in Table 2 below as “self-transcending knowledge” (K3) (Scharmer and Käufer, 2000). Most university departments today operate in no more than 2 or 3 of the column one boxes (K1) – the dissemination of know-what (e.g. cases), know-how (e.g. accounting), and know-why (e.g. theory of economics). Largely missing are the learning environments of column two (K2), which let students gather their own experience and learn from it. Finally, the learning environments of column three (K3), which let students develop the most strategically significant type of knowledge for the new knowledge economy are completely absent from most university departments and courses of study.

Table 2. Types of Knowledge in Organisations (after Scharmer and Käufer, 2000).

<table>
<thead>
<tr>
<th>Knowledge/Action Type</th>
<th>Explicit Knowledge (K1)</th>
<th>Tacit-Embodied Knowledge (K2)</th>
<th>Self-Transcending Knowledge (K3)</th>
<th>Not Knowing (K4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2: Strategizing</td>
<td>Know-how</td>
<td>Theory in-use</td>
<td>Imagination-in-action</td>
<td>Imagination-and-inaction</td>
</tr>
<tr>
<td>A3: Mental Modeling</td>
<td>Know-why</td>
<td>Metaphysics in-use</td>
<td>Inspiration-in-action</td>
<td>Inspiration-and-inaction</td>
</tr>
<tr>
<td>A4: Intention and Identity</td>
<td>Know-who</td>
<td>Ethics/Aesthetics in-use</td>
<td>Intuition-in-action</td>
<td>Intuition-and-inaction</td>
</tr>
<tr>
<td>A5: Mis-representation</td>
<td>Know-not</td>
<td>Translation-in-use</td>
<td>Imitation-in-derivation</td>
<td>Irresponsibility-in-action</td>
</tr>
</tbody>
</table>

The issue for many organizations and institutions today lies in the fact that their organizations claim K3 types of knowledge in their mission statements, whereas currently most have solid processes and practices for the transfer of K1 knowledge and a number of practicable methodologies for K2 knowledge, but these have tended to focus on reacting to problems of the past. Explicit knowledge and tacit-embodied knowledge are no longer, by themselves, enough to guarantee an institution’s ability “to sense and seize emerging opportunities” (Scharmer and Käufer, 2000: 5). While today’s global problems appear to require knowledge that will help individuals and social systems realize and bring to fruition the knowledge of imagination, inspiration, and intuition (K3), the current phase of universities illustrates even the problems are beyond knowledge. The root of this corollary resides in seeking comfort in the knowledge that by framing the global crises as problems of sustainability we can repair the future. But we know this is not possible, so in place of knowledge now the university has to learn to value not-knowing (K4). It can do this by misrepresentation (i.e. seeing the world differently), challenging the global currency of the derivative (i.e. insurance against change), and returning to risk (i.e. being productively irresponsible).

We propose that the design school of the future is in a truly unique position to influence and transform the increasingly complex and heterogeneous world we inhabit.
- a world where we are wrestling with major social, cultural, political, economic and environmental issues such as climate change, housing and health (Lawrence, 2004). But a design school that is capable of creating knowledge that is based on imagination, inspiration, and intuition and what Scharmer and Käufer (2000) call “self-transcending knowledge” for the emerging world will not happen if it is based on knowledge we already possess.

**An Irresponsible and Undisciplined Design School**

Given that the majority of the world’s problems in the 21st century are increasingly complex and interdependent, and they are not isolated to particular sectors or disciplines it is likely that any design school of the future will need to be more “undisciplined” in its approach to these challenges. Moreover, there might even be a need for the graduate to be “irresponsible” because we need more playful and habitable worlds that the old forms of production are ill equipped to produce (Marshall and Bleecker, 2010). We are advocating that there is a responsibility on designers to be “irresponsible” and, at the same time, “undisciplined” in their work. Brewer (2010: 92) goes even further in his criticism of existing forms of knowledge production and claims that contemporary “specialized forms of knowledge have become debased instruments of social control and discipline.” Moving towards “undisciplined” practice and states of “unknowing” in an age of alterplinarity therefore requires an epistemological shift. However, this will in turn offer us new ways of fixing the problems the old disciplinary and extra-disciplinary practices created in the first place.

The question of “disciplinarity” has featured large in design discourses in recent times, which has led to claims by some authors (e.g. Brown et al., 2010; Turnbull Hocking, 2010) that design is in a truly unique position to influence and transform the increasingly complex, heterogeneous, and crises-torn world that we currently inhabit - a world where we are wrestling with major social, cultural, political, economic and environmental challenges (Lawrence, 2004). Given this current situation, the world of design praxis has become a challenging and dynamic arena where professional disciplinary boundaries are increasingly fuzzy, economic and employment patterns are shifting, societal and cultural issues are enormously demanding, and technological developments (most notably in information and computing technologies) are expanding rapidly. This is a world where design praxis can involve the design of packaging for a new brand of expensive water one day and the next day require the design of a service for caring for excluded and disadvantaged people in rural locations. Design praxis now resides in a world where one-off designed objects such as a chair or a table can fetch hundreds of thousands of UK pounds at auction. This is a world where design projects regularly consist of teams that coalesce for a project, dissolve and reform with different personnel and expertise. Today it is increasingly common to find new fusions of creative practitioners working on projects. Designers, for example, no longer fit into precise categories such as product, textile and graphic design; rather they are a lively mixture of artists, engineers, designers, entrepreneurs and anthropologists (West, 2007). Tony Dunne, Professor of Interaction Design at the Royal College of Art, London states: “New hybrids of design are emerging. People don’t fit in neat categories; they’re a mixture of artists, engineers, designers, thinkers. They’re in that fuzzy space and might be finding it quite tough, but the results are really exciting.” (West, 2007).
This is not a new revelation, however. Design has always been viewed as a bridge between art, science and other subjects (Flusser, 1999). However, what is new is that designers and design companies in general are now faced with adopting and utilising techniques and approaches that until recently have been comparatively uncommon to them. Design praxis now commonly involves the usage of techniques from other areas like filmmaking, anthropology, storytelling, the social sciences, and so on. So it is fair to say that designers now transcend and transfigure several conventional disciplines. In other words, they often operate in “undisciplined” and productively “irresponsible” ways. Technological developments in the design and creation of products and spaces including rapid prototyping, 3D digitising, and motion capture has altered the practice of design enormously. There is a long list nowadays of contemporary designers that rely heavily on and exploit emerging computing and manufacturing technologies including Ron Arad, Ross Lovegrove, Frank Gehry, Thomas Heatherwick, Zaha Hadid to name just a few. The acceleration in digital design and manufacture tools has given creative practitioners new means of exploring new territories beyond and across the now fuzzy intersections that exist between art, architecture and design exploiting the latest computing technologies in their praxis (Rodgers and Smyth, 2010).

A good example of “undisciplined” and productively “irresponsible” praxis, which rejects established knowledge and conventional ways of working inherent in the old disciplinary practices that contributed to many of the problems described earlier in favour of new ways of working is that of HeHe. HeHe are a creative practice who often don’t work for a client brief. They are interested in using technology as a medium for helping them to express their creative ideas. Nuage Vert (Figure 1), a HeHe project that took several years to fully realise, originated as an idea of finding ways to materialise pollution where no prior knowledge was available. Helen Evans, one of the partners of HeHe, describes the “undisciplined” nature of the Nuage Vert project as:
...we learned along the way. I think when we first had the idea we didn’t know how to realise it because we didn’t know how to play the politics of it. We had one person inside the factory who was personally supporting the project even though his company wasn’t. And so he would advise us and say, well if you can get the aviation authority to say this was possible, that would help. (Helen Evans of HeHe, in Rodgers and Smyth, 2010: 70).

Conclusions
The emerging opportunities and challenges that we will face in an increasingly complex and heterogeneous world that we now inhabit will provide significant tests for design praxis. This emerging world, where we struggle with major social, cultural, political, economic and environmental crises including the ecological crisis, the crisis of global poverty and the health and well being crisis of our future selves (Lawrence, 2004), will necessitate the destruction of traditional creative disciplinary boundaries.

The idea of “undisciplined” and “irresponsible” praxis described in an earlier paper by the authors (Rodgers and Bremner, 2011) proposes an alternative disciplinarity (alterplinarity) where the creative practitioner is viewed as a prototype of a contemporary traveller whose passage through signs and formats refers to a contemporary experience of mobility, travel and transpassing where the aim is on materialising trajectories rather than destinations, and where the form of the work expresses a course, a wandering, rather than a fixed space-time. This idea has its origins in Nicholas Bourriaud’s notion of the “Altermodern” (Bourriaud, 2009). The fragmentation of distinct disciplines, including those located in traditional art and design contexts, has shifted design practice from being ‘discipline-based’ to ‘issue- or project-based’ (Heppell, 2006). This shift has emphasised and perhaps encouraged positively irresponsible practitioners, who purposely blur distinctions and borrow and utilise knowledge and methods from many different fields. Thus, we propose that the design school needs to shift from being “discipline-based” to “issue- or project-based”, and “undisciplined”, “irresponsible”, and “unknowing” graduates will be best placed to make connections that generate new knowledge and methods and identify ‘other’ dimensions of creative research, practice and thought that is needed for the contemporary complex and interdependent issues we will surely face.

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