Paying it forward: Practicing Scholarship of Engagement in Design Education

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Abstract

This paper reports on a project named Platform 6, which was designed to facilitate teacher development and thereby to develop teachers as scholars. Initiated within the context of Boyer's Scholarship of Engagement (1991)*, Platform 6 is a training programme and awareness drive devised for secondary school design teachers on the pedagogy of teaching design thinking and practice.*

The exploratory first leg of Platform 6 was limited to a sample of National Senior Certificate (NSC) schools in the Western Cape. Qualitative-exploratory research methodology was employed to gain real world insight about the teaching and learning environment of design teachers in South Africa. It was useful to understand the dynamics of design teaching in grades 10 to 12 in Western Cape schools.

Emergent central themes are that Design still receives poor recognition at secondary (high school) level, is undervalued, and the subject is stereotyped and consequently not always well supported. The most notable theme is the belief that design is a 'soft subject' for those 'creative learners that struggle with more challenging academic subjects' such as mathematics, science and biology. Although design teachers share a positive, constructive and impassioned approach to design teaching, they (for the most part) have not benefitted from professional developments in design teaching. Higher Education Institutions cannot ignore this need and as scholars of community engagement, Private Higher Education (PHE) is also obligated to contribute knowledge by paying teaching skills and knowledge forward.

Keywords*: Design Education, Design Thinking, Design Curriculum, Design Teacher training programme.*

Introduction

Questions regarding Design Education in South African Schools

Reasons for the majority of South African schools' underperformance make for constant debate not only in the educational sphere but also in society at large. While the blame is generally laid on inadequate education resources and expertise (Modisaotsile 2012, p.72), some voices ask the very relevant question: might it not be because teachers themselves are confronted by subject-specific challenges in the teaching and learning environment? Considering this as a historical dilemma, who needs to contribute to reparation? Albertyn & Daniels (in Bitzer 2009, p.410) argue that in a bigger context of community engagement it is morally responsible and necessary for any Higher Education (HE) institution to contribute constructively to the global knowledge society.

In the discipline of Design the issue manifests at secondary (high school) level where design teaching still receives scant recognition within the education system (Sidogi 2013). Design as a school subject remains a major challenge, where its value is not yet fully understood or accepted within the school system, consequently not always well supported and easily stereotyped.

Platform 6 as practicing scholarship of engagement in Design Education

This paper reports on a collective that was formed to develop design teachers as scholars and educators of design thinking and practice. Initiated within the context of Boyer's Scholarship of Engagement, or Application (1991), Platform 6 (a collective of tertiary design schools/faculties in South Africa) delivers training devised for secondary school design teachers (grades 10 to 12) on the pedagogy of teaching design thinking and practice. The training workshops were first developed and conducted as an official project of World Design Capital Cape Town 2014 (WDCCT 2014). However, in completion of WDCCT, Platform 6 agreed that the promotion and support of the teaching of design thinking and practice at secondary school level is an important long-term commitment. Therefore within a series of six workshops spanning eight months during 2014 and a two-day workshop hosted in 2015, a group of design Higher Education lecturers shared their skills in design with the community of teachers. The authors of this paper were an integral part of planning, driving and monitoring the roll-out and success of the initiative.

Review of Literature

Design diversity and capability

A broad purview of design includes broad-based systems design, environmental and spatial design (architecture, interior design, urban planning, production design and civil engineering), communication design (graphic, web and game design), service and interaction design, product and surface design (fashion design, industrial design, mechanical engineering, textile and furniture design). Design can be classified as object making, systems making, image and message making, place making, experience making for business and public sectors (DEDAT 2012). Design disciplines furthermore evolve and overlap as new technologies emerge and divergent skillsets are increasingly required to be able to develop and implement integrated solutions for these arising challenges.

Design as a discipline and act is practiced in product, process and systems development in commercial and social contexts, in real and virtual worlds. Tim Brown (2008, p.86), CEO and president of the renowned Design and Innovation Firm IDEO, explains that the thinking and practice of design have evolved into approaches towards social and commercial problem solving because innovation is a principal means of differentiation, of establishing a competitive advantage and importantly, of adding value to peoples' lives.

Positioning creativity, innovation and design

Reconciling the requirement for a more creative and innovative society and commercial world with the fundamentals of an education and career in design still seems to be a challenge for incumbent school leaderships, wider teaching fraternities and significant numbers of secondary school learners parents facing those all-important subject choices at senior secondary school level. Soberingly, Robinson (in Azzam 2009, pp.22–26) contends that instead of promoting creativity, society and schooling may actually be ensuring its systematic demise. Teal (2010) in agreement, reasons that learners are generally unable to cope effectively with the ambiguities of creativity.

Design should however not be positioned solely as abstractly creative in nature and output. Norman and Klemmer (2014), having studied the design curriculum and teaching and learning strategies of tertiary institutions in Asia, North America and Europe, explain that the stereotyping of design as subject and design students is a universal challenge. Learners and students are encouraged to take design because they may be labeled creative when they express aversion to STEM subjects. The misguided perception that design involves a mainly aesthetic focus on craft still persists. This view presents a significant barrier to attracting those design learners and students who, according to Norman (2011), can meet the modern demands of design with increased insight and skill in scientific methods of approach, procedure, solution finding and testing. Design thinking and innovation applies an interdisciplinary skillset and involves various mental states in a linear and non-linear manner (Teal

2010). Lau, Ng and Lee (2009) in a study of numerous approaches to creativity training in design education, confirm this thought direction, ranging from critical analysis required to identify the nature of a complex, ill-defined or "wicked" problem, divergent thinking for generating alternative solutions or convergent thinking to sort and prioritise options and creative decisions. The designer will skillfully analyse and synthesise patterns and reassemble them to identify what is original and meaningful (Amabile & Khaire 2008; Cassim 2013).

Teaching design thinking and practice

Amabile and Khaire (2008, p.102) reflect the views of a colloquium of leading scholars on creativity in organised environments with the premise that "one doesn't manage creativity. One manages for creativity". The conclusion is an appreciation of all the different creative types, diverse perspectives, individual interests and skillful support of the dynamics combined in the phases of design and the building of a group culture to guide and support idea development, enable collaboration and decrease fear of failure (Amabile et al. 2014, p.55; Palus & Horth 1996, pp.2–5)

The design teacher is encouraged to guide learners in discovering that innovation often results from unexpected connections garnered from a multiplicity of sources, or as Norman and Klemmer (2014) argue, in the realisation that the subject of design calls upon all of the humanities, the social, physical and biological sciences, engineering and business. Design teachers teach for creativity and innovation to overcome functional fixedness by stimulating interdisciplinary subject curiosity and exploration.

Design education furthermore promotes a pedagogy that encourages learners to approach all activities with a view to construct their own knowledge, to think creatively, collaborate with others and benefit from diversity rather than promote homogeneity. Robinson (in Azzam 2009, pp.22–26) emphasises the phrase "teaching for creativity" and like Savery and Duffy (in Wilson 1996), positions creative and collaborative learning in a constructivist paradigm, where understanding is socially negotiated as learners test their own- and examine the understanding of others. Teaching implies following a deepening approach to engage the acquired knowledge of students, stimulate their intrinsic curiosity at a conceptual level and encourage collaboration with peers and teachers in active learning (Biggs & Tang 2011).

Teachers of design, much as leaders and managers of creative organisations, should be knowledgeable enablers of deep learning built on design thinking and practice. The current design teacher is challenged in building a learning culture that integrates and accepts different creative types, diverse perspectives and individual interests; guides and supports idea development, enables collaboration, decreases fear of failure and skillfully supports the phases of design.

Research Methods

This research study aimed to identify and share insights into the challenges that educators of design and by extension young designers currently face at secondary school level. It is exploratory in scope and nature since it was limited to a sample of National Senior Certificate (NSC) schools in the Western Cape. The relevance of insights to other provinces in South Africa and to IEB (Independent Examinations Board) schools throughout South Africa require further research. Of the 430 schools that follow the NSC curriculum, 88 offer Design as a grade 10 to 12 subject (Buchner 2014). These schools were all invited by the Western Cape Department of Education (Design and Visual Arts) to participate in the projects implemented by Platform 6 in 2014 and 2015. Due to geographic programme constraints and other practicalities involved in the delivery of programme content and holding focus group oriented team discussion sessions, Platform 6 was limited to a maximum of twenty-four schools in the first programme phase (2014). In 2015 twenty-four secondary school teachers from eighteen schools and art centres participated in the two-day design workshop.

The participating schools serve a broad range of learners, ranging from affluent communities with a long-standing history of offering arts subjects, to schools serving mainly previously disadvantaged

communities where art subjects, specifically design, are at best recent additions to the school curricula (Buchner, 2014).

Qualitative-exploratory research methods were employed due to the paucity of available findings about the teaching and learning environment of design teachers in South Africa, particularly to gain real world insight (Stebbins 2001) into the dynamics of design teaching in grades 10 to 12 in schools in the Western Cape.

The 2014 Platform 6 programme consisted of a six-part series of 5-hour workshop sessions on the pedagogy of teaching design thinking and practice. Sessions were interspersed with small team discussions comparable to focus groups (Seale et al. 2004). Workshop presenters and facilitators helped five teams of approximately six teachers per team to identify and delve deeper into key issues and challenges in the teaching of design. The two facilitators (the authors of the paper) attended all of the workshop sessions and formed a working unit to analyse discussion content and systematically classify and track pervasive themes (Kothari, 2011; Adams et al. 2014). To collect data and ensure authenticity and representativeness of themes emerging from discussion sessions, the exploratory groundwork and identification of key themes resulting from the small team discussions were followed up with an online survey comprising of open-ended questions that presented teachers with the opportunity to freely reinforce their own experiences and the individual challenges encountered within their teaching environment (Marczyk et al. 2005). Content analysis of the latter reinforced the key themes that emerged from small team discussions in workshop sessions and presented specific examples of the key issues and challenges encountered by teachers in the teaching of design thinking and practice in grades 10 to 12. Of the participants, 17 of the 24 schools involved in the 2014 workshop series and small team discussion sessions submitted answers to the questionnaire.

The research conducted in completion of the 2015 two-day workshop also involved discussion groups and individual questionnaires comprising of open-ended questions. With nearly half of the 2015 workshop as first-time attendants of a Platform 6 training event the aim was to create an opportunity for new themes to emerge or for themes to evolve or shift in nature and priority. The workshop attendees were not exposed to previous research results or insights. The analysis of the data obtained through the 2015 workshop discussion groups and individual questionnaires reinforced the key themes that emerged from the research conducted in 2014 - the themes reemerged in the same form and order of priority. Correspondingly the 2015 research also produced ideas with regard improving the status of design as school subject – these thoughts are presented in completion to the paper under a theme titled ‘visibility and collaboration’.

The exploratory groundwork also included in-depth interviews with the head of Design and Visual Arts at the Western Cape Department of Education as well as a director of the department’s curriculum consultancy resource, Rock City Foundation (RCF). The purpose was to clarify and gain further insights into the key themes that emerged from the teacher discussion sessions and surveys. Many of the complexities and intricacies involved in promoting the purpose, scope and career pathways of design for current learners still need further investigation and exploration in an abductive style of scholarship Henn (2010) presenting the reasoning of conjecture, or ‘what could be’.

Three central themes emerged from the content analysis of team discussion sessions and surveys. A discussion of the three themes follows and verbatim statements from discussion sessions and surveys are interspersed in italics in order to place issues in context and to share the narrative of Platform 6 design teachers (Adams et al. 2014).

The Case for Promoting and Teaching Design Thinking and Practice

Theme One: Misconceptions regarding the purpose, scope and status of Design as subject

The Platform 6 research reveals that teachers of design are reasonably well informed and quite committed to the purpose and scope of design thinking and practice. They regard design as a

valuable school subject to develop critical, creative thinking and problem-solving skills for commercial and social contexts – "design is all around us, woven into every aspect of our daily lives". The majority of design teachers believe that design develops a way of thinking that is valuable for all subjects and vocational training.

That these views are not widely shared within school leadership and management (governing bodies and principals), teachers and parent bodies and inevitably too, the learner community at large however, forms a significant barrier to the proper positioning of the discipline and the value of design teaching. Teachers state that design is at best narrowly perceived as an aesthetic subject focused on craft learning in graphic or product design. Schools that are "art focused" seem to enjoy a more supportive environment in which creative output is celebrated, but the subject of design is nevertheless still perceived as minor or secondary to other art subjects. Its curriculum focus is, according to these teachers, equally misunderstood. A key theme reveals that design teachers routinely experience the role and scope of design as misunderstood, and consequently the healthy development of a culture of design thinking and education at secondary school level is frustrated – "school management do not understand what I teach" and "my colleagues disregard the subject". The net effect is that learners are discouraged from exploring design as a subject choice.

To make matters worse, design as a subject is not included in the designated list of school subjects approved as preparatory for the higher demands of degree studies. The Umalusi (the Council for Quality Assurance in General and Further Education and Training in South Africa) directive for certification of NSC schools specifies that learners who aspire to undertake degree studies be expected to perform satisfactorily in at least four subjects from a designated list of National Senior Certificate subjects (Umalusi, 2013). Whereas the subjects Visual Arts and Dramatic Arts are included in the designated list, Design as subject is not. This condition, according to design teachers and the head of Design and Visual Arts at the Western Cape Department of Education, is the central most influential factor deterring school governing bodies and principals from offering the subject design in grades 10 to 12, or in recommending the subject choice to learners and parents. Design teachers say that due to anxieties that surround learners' subject choices, the confusion that currently exists around designated subjects, all compounded by a general lack of appreciation of the role and scope of design as subject and career choice, it is no surprise that school managements, teaching bodies and parents are rather dismissive of design as a subject choice. Teachers argue that they "are losing excellent designers because it is not a university subject" and that "the school will not give resources because we are not a designated subject".

There is some scope for reprieve, however. The same Umalusi directives for certification allow Higher Education institutions the prerogative, in terms of section 37 of the Higher Education Act, 1997 (Act No.101 of 1997), to determine specific admission requirements, levels of achievement and or combinations of recognised NSC subjects (Umalusi 2013). Teachers, school leadership and parents can play an active role in promoting design as a subject of importance. Unfortunately the qualitative-exploratory research conducted through Platform 6 indicates that teachers, school leaderships, parents and learners are still generally ignorant about which public and private Higher Education institutions recommend or recognise design as a subject for further studies.

Theme Two: Combating the creative stereotype clouding Design as Discipline

Misconceptions with regard to the purpose of design, its scope and status have led to many negative stereotypes. The exploratory research conducted through Platform 6 reveals that these negative views exist widely within the broader teaching body, the school leadership and also parents. The dominant stereotype seems to be that design is a "soft" subject for learners who battle with academic subjects – "it is hardly acknowledged as a subject with substance, let alone one with academic merit". Negative views about design as subject also extend to the negative profiling of its learners and teachers.

This Platform 6 study contributes to the notion that the majority of design teachers still have to overcome a badly informed understanding of the nature, purpose and status of design as a subject as well as combat several negative stereotypes associated with the discipline. Learners seem to have very limited support in the process of exploring and pursuing design as a subject and career interest. When sound-boarding does take place, for example with parents and or teachers in other subject areas, this advice suffers from a constricted understanding of the role and scope of design, tainted by ill-informed ideas and stereotypes around creativity and design as practice and future area of study. It is possible that the Design Maturity Ladder (DEDAT 2012) among stakeholders in Design, as grade 10 to 12 subject, is confined to an understanding of design as a function merely of aesthetics for the creatively oriented non-academic learner.

Theme Three: Design teachers need skills and confidence to teach

The groundwork done through Platform 6 suggests that the current level of teaching and the knowledge required for teaching design in schools needs to be addressed. The insights gained from group discussions and surveys reveal that the vast majority of design teachers participating in Platform 6 do not have formal qualifications or experience in design teaching or practice. Buchner (2014) confirms that this is true for the majority of teachers in the 88 schools in the Western Cape who teach design in grades 10 to 12. The teachers mostly have Fine Art qualifications and years of experience in teaching Visual Arts. It must be noted that according to Norman and Klemmer (2014) who speak from the Asian, North American and European perspective, qualified teachers and lecturers in design thinking and practice is a universal scarcity primarily because theory, curriculum and qualifications unique to the requirements of design thinking and applied practical design are not long established. Cassim (2013) furthermore points out that the field is challenged in keeping abreast with the expanding and shifting definitions of the design profession. Teaching and training in the field thus depends heavily on self-acquired practitioner wisdom.

The exploratory research insights do however present a positive and constructive frame from which the teaching skill base in the thinking and practice of design can be developed. Teachers unanimously believe that they have the fundamental skillsets or alternatively the aptitude to educate learners in design. They claim this with passion and commitment for the subject and a desire to continue developing personal insight and expertise in teaching design. It is also important to note that many teachers in moments of reflection evinced a strong sense of responsibility to promote the purpose and value of the subject to learners, parents, fellow teachers and school leadership - “it starts with us, we are the educators” and “(design learners) can make a difference and change the world”.

Conclusion: Platforms for Innovation

Horst Rittel’s concept of ‘wicked problems’ seems apposite here. The information is confusing, many stakeholders are involved and the ramifications are unclear (Buchanan 1992, p.15). The problems surrounding the teaching of design thinking and practice in grades 10 to 12 seem to be largely rooted in and fed by misconception. The field and subject of design are misunderstood in role, scope and conditions and indicate much room for further studies. These conditions may be limited to NSC schools in the Western Cape, but most likely are not.

The development of a next generation of design thinkers and practitioners and the promotion of the purpose, scope and career pathways that design may offer current and future learners are critical goals. The aim must be to embed design as a vital economic tool for unlocking innovation and a driving force for competitiveness at state and provincial level.

This qualitative-exploratory study posits that innovation platforms such as The Western Cape Design Strategy (DEDAT) and Higher Education South Africa (HESA) - a government body tasked to conduct research on and recommend changes or additions to the current designated list of NSC subjects, should collectively investigate the potential for the subject of design to help prepare learners for the creative and critical thinking required for first-time degree studies. Roger Martin, dean of Toronto’s

Rotman School of Business, responsible for injecting design thinking into tertiary management education, argues that "today's business people don't need to understand designers better, they need to become designers" (Dunne & Martin 2006, p.513). In the short term an innovation platform such as The Western Cape Design Strategy (DEDAT) can, as proposed by design teachers in this study, identify and create clarity around public and private Higher Education institutions that recommend or recognise design as a suitable subject for higher degree study.

An official shift in the status of the subject of design, coupled with clarity around the admission requirements of public and private Higher Education institutions, will have a systemic impact on the challenges identified in this paper. Misconceptions with regard to the purpose, scope and status of the subject will largely dissipate as the purpose of design becomes better understood and will also stimulate further interest in its scope and wide-ranging potential pathways for studies. The better the purpose, scope and status of design as subject is understood and promoted, the more it will become difficult for easy stereotyping to hamper the development of a culture of design thinking and education at secondary school level. Discouraging learners from exploring design as a subject choice will lessen. It is conceivable that a systemic shift will, as this paper suggests, inspire and support a new era of design learners within a South African culture of innovation.

Thankfully, there is a positive and constructive framework from which the teaching skills base in design thinking and practice can be developed. Teachers believe they have the fundamental skillsets or aptitudes required to educate learners in design; they possess the passion, commitment and desire to continue developing the expertise needed for teaching design and a strong sense of responsibility to promote the subject's purpose and value to learners, parents, fellow teachers and school leadership.

This framework has encouraged an ideas-oriented theme of 'visibility and collaboration' to emerge. Design teachers recognise that a higher level of self-responsibility among teachers of design is required to optimise and increase opportunities to showcase design events and projects at school level. Functional integration with existing school systems and projects may be able to support general exhibition of learners' work throughout the year. This involves creating awareness of the subject of design by developing, for example, design solutions specific to the school's systems, procedures and events. Platform 6 facilitated such a social innovation project in 2015 in collaboration with the school management, design teacher and learners from a secondary school in Athlone, Cape Town. Grade 11 and 12 pupils engaged with challenges such as teenage pregnancy and drug and alcohol abuse and were tasked to troubleshoot their prototypes with peers, teachers, the parent body and community at large.

Visibility, according to the design teachers involved in Platform 6, can accordingly be increased and learners, parents and school leadership and management may be further inspired by collaborative visits from tertiary institutions and the department, including showcasing prize-giving and bursary events for top performers. The possibility of a unique online showcase of grade 10 to 12 design work by top performers and competition winners, possibly hosted or supported by the Department of Education (Design and Visual Arts), was also mentioned.

This paper, based on insights gained from qualitative-exploratory research conducted through Platform 6, presents a polemic and a call to action. Complexities and intricacies still need to be uncovered and explored, but as an initial study promoting 'what could be', it hopes to contribute key insights and focus points for innovation platforms and policymakers towards building a more supportive and inspiring secondary school design culture and a next generation of able design thinkers and practitioners in South Africa.

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