20/20 Design Vision

CONFERENCE PROCEEDINGS OF THE SIXTH INTERNATIONAL DEFSA CONFERENCE

Compilers

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PUBLICATION OF DEFSA CONFERENCE PROCEEDINGS

The conference proceedings are published by the Design Education Forum of Southern Africa (DEFSA) on the following website: www.defsa.org.za

The views expressed in this publication are those of the authors and not necessarily of DEFSA. Papers are published as submitted by the authors, after they have considered and included recommendations from peer reviewers.

Full papers are submitted for peer review after successful acceptance of a conference abstract. All full papers submitted to the DEFSA conference committee are subjected to a rigorous double blind peer review process. This process takes place prior to both the verbal presentation at the conference and the publication of the proceedings. Expert specialists within the field of Art, Design and Architecture are selected to perform the reviews (Reviewers list is included). Authors receive feedback in the form of a peer review report. A confidentiality clause ensures that both authors and reviewers remain anonymous during the peer review process.

ISBN No 978-0-620-52112-3

FOREWORD

Brief overview of the conference theme

The Sixth International DEFSA conference was appropriately titled *20/20 Design Vision.* In 2011, the Forum was celebrating its 20th anniversary and in so doing, marked an important milestone in its reflection on design education from the past, present as well as visions for the future. The conference theme - *20/20 Design Vision*, offered participants the opportunity to focus on many interesting topics that ranged from an overview of the state of design education in the last 20 years to more importantly offering future visions beyond the present.

A total of 23 papers were presented over a two-day period, addressing a range of topics that were pertinent to the conference theme. Of these papers 22 papers were accepted for publication in the conference proceedings.

Conference subthemes

Reflective vision - "Hindsight is always 20/20" Billy Wilder

- Undergraduate teaching and learning practices
- Engaging with the design profession/industry
- Design research projects or focus areas

Three dimensional vision: exploring the multi-dimensional design education landscape

- Design and identity
- Design and culture
- Design and the human body
- Cross- and multidisciplinary design collaborations
- Interdisciplinary research and research focus areas

Peripheral vision: Exploring the outer boundaries that inform/overlap with design education

- National and international collaborations
- Cross- and/or multidisciplinary collaboration with “the other” disciplines
- Synergies with peripheral disciplines or activities

Future vision: Future projections and strategies for design education

- New approaches/perspectives for design education teaching and learning
- Research methods and methodology for design education research
- Evolving or emerging design education disciplines
- New design education paradigms

KEYNOTE SPEAKERS

Two international and one national keynote speakers addressed the conference delegates. A short biography of each speaker is presented below with the title or focus area of their presentations.

Prof Janis Jefferies is an artist, writer and curator. She is professor of Visual Arts and Director of the Constance Howard Resource and Research Centre in Textiles and Artistic Director of Goldsmiths Digital Studios, Goldsmiths, University of London and Co-director of CAST, centre for social and creative technologies. She convenes the MA/MFA in Computational Studio Arts and the PhD in Arts and Computational Technology and advises Goldsmiths Graduate School on practice based research. She has supervised 10 supervised practice based PhD students to successful completion and examined 15 others around the world. She has supervised and supported over 250 students at M-level since 1990 in her capacity as Head of MA Textiles and then Head of Visual Arts (until 2004).

The paper delivered by Prof Jefferies was titled; How to do things with Design? This paper did not form part of the peer review process and is available on the following website; www.uj.ac.za/viad.

Dr Bernadette Blair is the Director of Academic Development in Studio-Based Learning & Teaching in the Faculty of Art, Design & Architecture at Kingston University. She is member of Art Design & Media subject centre of the Higher Education Academy (ADM-HEA) Reference Group, the Design Research Society, SIG for Design Pedagogy and is an elected member of the GLAD (Group for Learning in Art & Design) executive committee.

The paper delivered by Dr Blair was submitted for peer review and is included in the conference proceedings.

Ms Mel Hagen has had a long history in Design Education and from 2000-2007 served as Dean of Faculty of informatics and Design in the newly merged Cape Peninsula University of Technology. She served on the management committee of the Design Education Forum from 1996, and as national President from 1998 to 2002. Ms Hagen has been active in the promotion of Design at both national and provincial level, and has served on numerous policy and strategy task teams and reference groups relating to design in economic development, design policy development, design education, and innovation at both national and provincial levels. She served on the interim Steering Committee for the Cape Town East City Design precinct proposal and for the World Design Capital Bid for Cape Town. Is a Founding Member of the Cape Craft and Design Institute, serving from 2001 to 2003 as Chairperson of the Steering Committee and from 2004 – 2009 as Chairperson of the Board Directors and is a founding member of the Network of African Designers.

The presentation delivered by Ms Hagen reflected on the past 20 years of DEFSA in a presentation titled; Reflections on a Design Education journey. This presentation is not included in the conference proceedings.

PEER REVIEWERS

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ACKNOWLEDGEMENT

A large group of people, across the world, have made significant contributions to the successful delivery of the Sixth International DEFSA Conference and the publication of the conference proceedings.

The following people deserve receiving individual acknowledgement:

- Tanya Smit (DEFSA secretary)
- Dianne Volek (DEFSA website manager)
- Amanda Breytenbach (Conference Chair)
- Leora Faber (Director of the Research Centre: Visual Identities in Art and Design)
- Marna Enslin (Formatting of conference papers)

The following groups are acknowledged for their input:

- Contemporary Events
- DEFSA Executive Committee
- Faculty of Art, Design and Architecture at University of Johannesburg

Thank you to all the authors that invested a considerable amount of time and effort in the preparation and submission of the conference papers. In addition, a word of sincere appreciation is extended to the peer reviewers for reviewing the papers.

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FINDING THOUGHT: AN INVESTIGATION INTO THE DEVELOPMENT OF CRITICAL THINKING SKILLS IN INDUSTRIAL DESIGN

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Abstract

In higher education today, it is imperative to equip students with the skills required by their future profession. One such skill, as required of a professional Industrial Designer, is the ability to find creative and suitable solutions to often complex problems. As decision making and problem solving are key elements of a professional industrial designer's practice, they should be developed and encouraged as part of the tertiary programme. The trend towards learner driven investigation and research, as well as interactive mixed methodologies, have facilitated many projects requiring thinking skills. But does the learning environment support and develop these skills?

Noticing a change in the students coming from the school environment, an investigation began into critical thinking skills. Understanding and evaluating information is the essence of critical thinking. The Think tank project began in 2010, with selected students completing the Ennis-Weir Critical thinking test, a means of measuring thinking skills. Given the surprising results, it was necessary to examine the studio-based learning environment; problem based learning, as well as the processes and critiques in design education. The attributes of the Generation Y students were also contributing factors to the results. The type of test used also needed to be considered in the multilingual South African environment, with many students having English as a second or third language.

The Think tank project thus needed to consider different types of thinking (including Design Thinking), in order to fairly assess whether the learning environment is conducive to the development of critical thinking skills. This paper is a detailed case study of the pilot project, run during July 2011, with second year Industrial Design students at the Cape Peninsula University of Technology. The findings of the case study are described here, as well as recommendations for future study and curriculum changes.
Key Words*:* critical thinking, industrial design, curriculum, design education

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Introduction

"Design is the central factor of innovative humanisation of technologies and the crucial factor of cultural and economic exchange", as described by the International Council of Societies of Industrial Design[1] (ICSID, 2008). The industrial designer gives shape to the idea or object or system that would form part of / the whole solution to a defined problem. The aim of the Industrial Design programme, at the Cape Peninsula University of Technology (CPUT), is to help develop the appropriate skills for students to function well as professional industrial designers. This means that they need to be able to (among other things) follow the design process of analysis, problem solving, evaluation and reflection; and communicate using verbal / visual skills. Therefore, they need the thinking skills to make appropriate and informed decisions, in relevant contexts. The aims of the Think tank project are to discover whether the students *can* think critically – as this is clearly a requirement for the profession, and whether the Industrial Design learning environment at CPUT is conducive to the development of critical thinking skills. Using this information can lead to recommendations to improve the critical thinking ability of Industrial Design graduates.

[1] A more complete description would be describing design as follows: "…a creative activity whose aim is to establish the multi-faceted qualities of objects, processes, services and their systems in whole life cycles. Therefore, design is the central factor of innovative humanisation of technologies and the crucial factor of cultural and economic exchange" (ICSID 2008).

In 2010, the Ennis-Weir Critical Thinking test was completed by a group of students to evaluate their ability to think critically. The surprising results of this test necessitated the consideration of the characteristics of Generation Y students, different modes of thinking, as well as the existing curriculum. The next phase of the Think tank project was the pilot project in July 2011, which was run with second year CPUT Industrial Design students, and was focussed on public transport in Cape Town. It was designed to challenge the students to explore and analyse situations, as well as to evaluate and refine their solutions. In order to evaluate their ability to think critically, a focus group within the second year student group completed the Cornell Critical Thinking Test (level Z). The results of both these tests are discussed in this paper, in relation to the learning environment.

Generation Y students

Staff in the Industrial Design Department began to notice that students struggled to match relevant information with the assigned problem / project, and that students appeared to need more guidance in making design decisions, indicating an inability to evaluate the situation and make decisions based on that analysis. After many informal discussions about the students' perceived increasing need for affirmation and assistance, we conducted a survey with industrial design staff[2]. The results are detailed in Figure 1 below. These characteristics in the survey were aligned with the research that describes the characteristics of "Generation Y" (Gen Y) students.

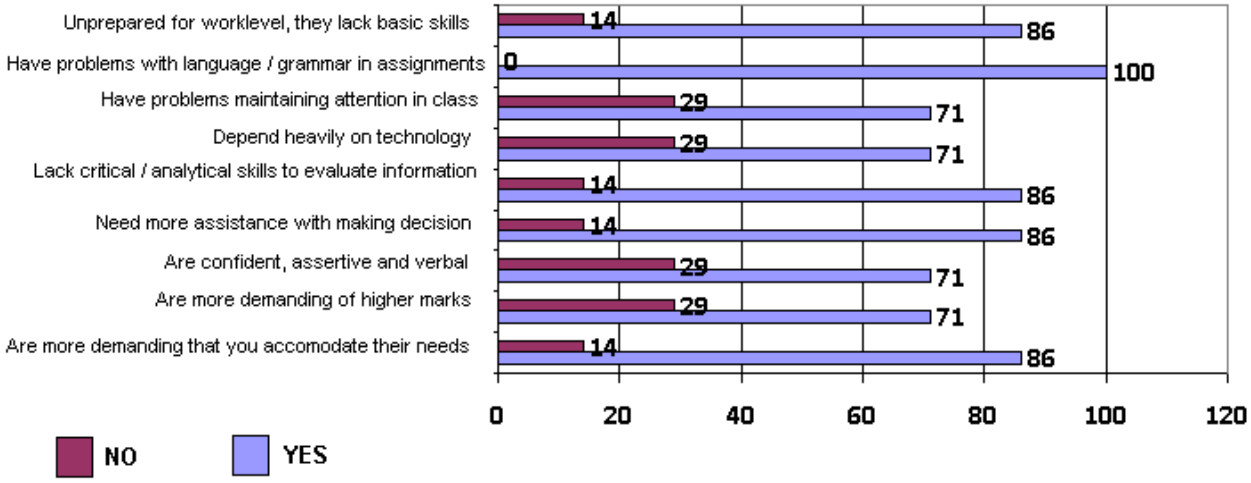

Figure 1. Current student characteristics, observed by staff. (Barnes & Du Preez 2011)

Generation Y students have grown up in a different world to that of Generation X. The differences between the generations are highlighted in Table 1 below. Broadly speaking, it is accepted that Gen Y students, also known as "the Millennial Generation" and "the Net Generation, Digital Natives, Echo Boomers, and Nexters", were born between 1977 and 1982 (Bracey, Bevill and Roach 2010:21). These students have been in environments with visual digital media all their lives, and this contributes to their need for instant gratification and preference for visuals rather than text (Black 2010:95). In the South African education context, these students are also the earliest products of an outcomes-based school education.

Black (2010:98) asserts that the "sheer volume of visual, auditory, and verbal information in today's world is forcing digital natives to edit, sift and filter more". In fact, it is this additional volume of information that contributes to what CIBER (cited in Black 2010:98) describes as the Gen Y's heavy reliance on computer technology. Students "view rather than read, and lack many critical or analytical skills needed to evaluate the information they find" (CIBER cited in Black 2010:98). Weiler in his article, "Information-Seeking Behaviour in Generation Y Students: Motivation, Critical Thinking, and Learning Theory", describes these technologically-reliant students:

> The students currently on college campuses, as well as those due to arrive in the next few years, have grown up in front of electronic screens: televisions, movies, video games, computer monitors. It has

[2] Seven, of a possible nine, fulltime lecturing staff completed the survey. The most inexperienced lecturer has been teaching for 5 years, the most experienced, for 21 years.

> been said that student critical thinking and other cognitive skills (as well as their physical well-being) are suffering because of the large proportion of time spent in sedentary pastimes, passively absorbing words and images, rather than in reading (Weiler 2005:46).

Some of the notable characteristics of Gen Y students are their "intuitive understanding of digital language" (Black 2010:95), excellent multitasking abilities and how easily they are bored (Bracey *et al.* 2010:22). Black suggests that these factors contribute to "students' shorter attention spans and lack of in depth learning" (2010:98). Additionally, or perhaps consequently, they seem to need a considerable amount of personal attention. To staff, they appear to need more assistance and guidance, and thus less capable. In stark contrast, they see themselves as far more capable. Using results from *The American Freshman: National Norms for Fall 1999,* Soule (2001:3) describes Gen Y students as having "record levels of self-confidence" as they entered the tertiary institutions in America. While 60% of all students rated themselves as "above average" or "top 10%", Soule suggests that this stems, not from academic knowledge levels, but rather from grade inflation. Emeagwali (2011:24) confirms that many Gen Y students believe they have what is required to succeed in tertiary education, discover that this is not true, and are "shocked by that realization". Masie (2004 cited in Black 2010:92) goes as far as to describe the Gen Y students as "the "everyone gets a trophy" (or an "A") generation".

Generation X Students in 1969	Generation Y Students in 2009
General learning orientation	Vocational / career orientation
Family / self-financed	Government / family / self financed
Academically prepared	Lacking basic skills
Competitive	Collaborative
Worked, studied alone	Group work, team work
Lack of experience with diversity	Acceptance of diversity, tolerant
Unsure of self	Assertive and confident
Low debt after college	High debt and defaults on loans after college
Friendships bound by proximity	Friendships not bound by geography
Took responsibility for self	Growth of 'helicopter' parents who assume responsibility for college-age children
Acceptance of institutional structure	More demanding with customer expectations of immediate service
A privilege to attend college	An expectation to attend college; entitlement
Family stability	Family instability
Mentally healthy	Less mentally healthy
Dependent upon note-taking; paper and pencil	Dependent upon technology; "digital natives"

Table 1. Differences between Generations X and Y. (Amended from *Characteristics of Students*. Black, 2010:94)

Weiler (2005) warns that the Gen Y students that are already part of tertiary landscape demonstrate different "information seeking behaviors".

> Critical thinking is a process that is widely acknowledged in the literature to be crucial to the learning process, to cognitive development, and to effective information seeking. Evaluation and effective use of information in any form is impossible without the use of critical thinking, and so the level and quality of critical thinking are of primary concern when speaking of information seeking behaviors in Generation Y students. (Weiler 2005:46)

This warning is given weight by observations in the History of Art and Design Department at CPUT (Barnes and Du Preez 2010) over the last two years. Examples include students asking questions that are answered in the written brief. They have a copy of the brief, but seem unable to read it effectively / absorb the contents / or they feel insecure about *their* understanding of the brief. In a different example, students are unable to see how information found relates to the assignment topic. This is despite the student having reviewed the information, which was presented in clear language. Still further students are unable to create a hierarchy of ideas in an argument, relying on repetition or summarising.

What is critical thinking?

Schafersman (1991:3) describes critical thinking as "higher order thinking", and also as "reasonable, responsible, and skillful thinking, that is focused on deciding what to believe or do". Understanding and

evaluating information are the key features of critical thinking. Attributes of critical thinkers described by Nickerson (1987, cited by Schafersman 1991:4) include:

- "Uses evidence skillfully and impartially
- organizes thoughts and articulates them concisely and coherently
- distinguishes between logically valid and invalid references
- attempts to anticipate probable consequences of alternative actions
- applies problem solving techniques in domains other than those in which learned."

Richard Paul even stated: "critical thinking is the art of thinking about your thinking while you are thinking in order to make your thinking better..." (Paul 1993:643), emphasising the importance of analysis and evaluation.

Why is critical thinking important to the design process and design thinking?

One of the key factors in design is the ability to analyse a situation and make appropriate decisions, within predetermined boundaries. In traditional universities professional disciplines like law, business and medicine are taught mostly in large group lecturing style. Design is different in that practical subjects are taught in a studio environment. The shared space in a studio encourages a sharing of ideas and a focus on exploration, reflection and peer engagement. It is the learning environment which best reflects the way in which design professionals work: "Like other types of pedagogies, design studio pedagogy conveys, conserves, and transmits the values of design professions and society at large" (Salama & Wilkinson 2007:3).

This studio teaching environment combined with a student focused teaching method, which mimics the design process itself, can be described as a continuous process of creative investigation, evaluation, reflection and adaption. This process, together with its theoretical underpinning is referred to as design thinking. Design thinking is aligned to critical thinking as explored by Ford and Profetto-McGarth (1994) who explained critical thinking, within the context of curriculum, as praxis. In their model, praxis is a relationship between action and reflection which goes beyond just investigating a problem situation to include knowledge systems, critical reflection and associated action: "knowledge and action are dialectically related through the mediation of critical reflection" (Ford & Profetti-McGrath 1994:342).

Design thinking has become a prominent method of investigation and review in many professions outside design. One reason for the extensive use of the method is that design thinking allows for intense situational analysis, combined with creative solution exploration[3]. Design thinking is a method of approaching problematic situations, then analysing that situation and establishing / suggesting actions to create a more beneficial scenario. It differs from other thinking methods in that it represents a range of creative components which are often overlooked in scientific thinking and other methods of inquiry (Owen 2007:16). The Industrial Design Department's design process can broadly be broken up into three main sections: *1) Context, Calculation & Creative Exploration, 2) Selection & Production 3) Reflection, Adaption and Reflection.*

The first phase (*Context, Calculation & Creative Exploration*) covers identifying a design problem[4] or need and is followed by a thorough examination of the topic. Following this investigation, a design brief is written[5]. The second phase, *Selection and Production*, includes selecting an appropriate design solution and producing the design. This stage in the design process depends on a student's ability to critically review the situation and extract the necessary information to proceed to the next stage of the design process, or decide that more exploration is required. Donald Schön (1987) refers

[3] Warren Berger explores the concept of Design Thinking as a new way for varying industries to approach problems and find solutions in his 2009 book *Glimmer: How Design Can Change Your Life, and Maybe Even the World*, Penguin Press [http://glimmersite.com/]

[4] A design 'problem' is not necessarily an actual physical predicament. It could be how to improve an object or how to make an environment more accessible.

[5] The design brief is a detailed document between the designer and the client, outlining all the information relating to a design project. It outlines what is required of the design and the project timeframe. It may also include additional information such as material restriction, technology specification, intermediary deadlines, budgetary information etc. After both parties have agreed to the details outlined in the brief, the designer will find as many feasible solutions to the design problem. The design solutions should always adhere to the specifications detailed in the brief and thus the designer must have a critical understanding of the project parameters.

to this process as *reflection-in-action,* because learners are reflecting on what they are doing as part of the learning process and making appropriate adjustments.

The final phase of the design process is *Reflection, Adaption and Reflection*. Reflection as part of the design process (*reflection-in-action*) is a natural process during which designers continuously review what they are doing. This process relies on a student's ability to think critically and make appropriate decisions. Once a design is finalised, *reflection-on-action* is encouraged*,* evaluating the entire process (Schön 1987). This reflection, leads to two situations: in the first the designer is satisfied with the solution and presents it to the client, in the second the designer evaluates the process and outcome and determines that the solution does not answer the original brief. The result of the second scenario is a return to the first phase of the design process, exploring possible solutions to the design flaw. This scenario links to McPeck's (1981) view of critical thinking as key to professions which require analytical and problem solving skills. In each of the design process stages, the learner must evaluate, critically, new knowledge and design choices – making critical thought a key skill for design[6].

Initial testing and findings

Industrial Design students at CPUT are required to make informed decisions throughout the design process and then express their solutions in three dimensional products. Although the process is supported and facilitated by lecturer consultation and feedback, students are expected to develop an understanding of the design process and required decision making skills whilst working on design projects. The importance of critical thinking in the design process is clearly linked to a student's ability to critically identify suitable solutions, and then make an informed decision regarding which solution is most appropriate. To establish whether Industrial design students were struggling with critical thinking, a group of students completed two established critical thinking tests. The first test was run during 2010 with first year students, to establish the basic level of critical thinking within the focus group. The selected test was the Ennis-Weir Critical Thinking Test, designed by Robert H. Ennis and Eric Weir (1985). In the following year students from the same group, now at second year level, completed the *Cornell Critical Thinking Test Level Z as part of an analytical workshop.*

Ennis-Weir Testing Focus Area	Design Activities and Processes	Cornell Critical Thinking Test Level Z
• "Getting the point".	Understanding the design 'problem' and what is being asked of the designer.	Identification of assumptions Semantics
• "Seeing the reasons and assumptions".	Analysing the reason for the design activity and identifying project constraints and details. Developing design brief.	Identification of assumptions
• "Stating one's point"	Analysing the design brief and formulating appropriate proposed solutions. Evaluating all proposed solutions to identify the most suitable design solution for the context and other criteria. Being able to visually and verbally communicate these proposals, and the reasoning for final selections, to clients and fellow designers.	Induction
• "Offering good reasons".		Deduction
• "Seeing other possibilities (including other possible explanations)"		Definition
• "Responding to and avoiding equivocation, irrelevance, circularity, and reversal of an if-then relationship, overgeneralization, credibility problems, and the use of emotive language to persuade".		Prediction in Planning Experiments

Table 2: Focal Criteria and Cognitive Elements of the Ennis-Weir Critical Thinking test, the Cornell Critical Thinking Test Level Z and the Design Process (Barnes & Du Preez 2011*)*

The Ennis-Weir test is aimed at learners from secondary school level to tertiary level. The test is formulated within an essay structure and requires the respondent to write an appropriate response based on a mock letter. Although the design process is not based in a written format, which is used as

[6] Critical thinking is only one of the ways of thinking required during the design process. The focus of this project is critical thinking skills and not skills relating to other ways of thinking, such as creative thinking.

the medium in the majority of critical thinking tests, the link between cognitive skills tested are similar (see Table 2, overleaf). The essay response is evaluated against a framework. The test has a number of focus areas, including (Ennis 1985): "getting the point"; seeing the reasons and assumptions; stating one's point; offering good reasons; seeing other possibilities (including other possible explanations) and responding to and avoiding equivocation, irrelevance, circularity, reversal of an if-then (or other conditional) relationship, over generalisation, credibility problems, and the use of emotive language to persuade. To evaluate the basic skill of thinking critically, nine diverse (gender, culture and home language) Industrial Design students were selected to take the Ennis-Weir test[7].
The average score of the first year test group of Industrial Design students at CPUT was 9.6, out of a possible top score of 29. The variability of the result, measured as a standard deviation, is 4.9. The relatively low standard deviation means that the score of each individual respondent was not far from the average of the group (the mean) and supports the validity of the findings. The average of the 2010 CPUT findings, when compared to those of a Midwestern University (USA) study documented in 1993, is quite low. The Midwestern University's Ennis-Weir study resulted in an average score of 14.6 (Ennis 2005). Although the average score is significantly higher than that of the Industrial Design students at CPUT, the standard deviation is also higher, at 6.1 (Ennis 2005). The higher standard deviation implies that the individual scores, achieved at the Midwestern University, were more varied. Results of a 2000 / 2001 study completed at a community college in Florida (USA) also reported a higher group average than CPUT's students – the undergraduate test group had a mean of 11.91 with a standard deviation of 8.61 (Reed & Kromrey 2001).

Group	N	Mean	SD
198 undergraduates in an educational psychology course at a large Midwestern university: given a number of tests to see the relationship between critical thinking and certain academic and personality variables (Taube, 1993).	187	14.6	6.1
9 undergraduate students from the Industrial Design course at CPUT: given the test to document their skill level of critical analysis and thought, as well as formulation of structured arguments based on given information.	9	9.6	4.9

Notes: "SD" means standard deviation. "N" means number of students. (Ennis, 2005)

Table 3. Ennis-Weir User Norms for Students without Claimed Prior Critical Thinking Instruction Compared to Industrial Design Students at CPUT (Ennis, 2005)

The link to critical thinking and design, as documented in this article, highlights critical thinking as one of the modes of thinking required of a successful designer. While the original test group of first year Industrial Design students was small (9 students), the relatively low scores were surprising enough to fuel further investigation into students' thinking skills, rather than draw conclusions. To further investigate the situation, a research workshop was initiated with the same group of Industrial Design students during 2011. A larger test group and digitally managed test, the Cornell Critical Thinking Test Level Z[8], offered more defined findings regarding the level of critical thinking among students.

Public Transport Project: Critical Inquiry

During July 2011 a workshop entitled Public Transport Project: Critical Inquiry (PTPCI)[9] was run with the same group of students who took the Ennis-Weir test (as part of a larger test group). The week long workshop was constructed around activities, teaching and learning practices and assessments that had key critical thinking elements embedded, as documented in Table 4. During the workshop,

[7] As the evaluations of the responses are completed by people, there is a risk of subjective or irregular assessment. To address this, the Cornell Critical Thinking Test (Level Z) will be used to review results and produce new data. The Cornell Test, designed by Robert Ennis and Jason Millman, is completed electronically, therefore eliminating the risk of subjective assessment. The test comprises multiple choice sections aimed at testing various aspects of critical thought

[8] Level Z is aimed at advanced and gifted high school students, college students, graduate students, and other adults.

[9] The workshop was run with 40 second year Industrial Design students, and forms part of a larger practical project which aims to investigate possible solutions to travel between the commuter's home, the public transport route, and the end of the route to their workplace.

the concept of critical thinking[10] was introduced to ensure all students understood the concept, as well as the important role critical thinking plays in design. Journal reflections were part of the project, to limit the impact of language issues. Students were free to express themselves using imagery, as opposed to just text.

Cornell critical thinking testing and results

During the PTPCI workshop, 28 second year Industrial Design students completed the Cornell Critical Thinking Level Z test. All students also completed a reflective questionnaire based on the workshop. The reflective questionnaires indicated that 86% of students considered themselves critical thinkers. The Cornell Critical Thinking Test consists of 52 multi-choice items, each with three choices and one correct answer. Students were given 60[11] minutes to complete the test. As with the Ennis-Weir test there are clear connections between the cognitive processes relating to the Cornell Critical Thinking Test and the design process (Table 2).

The test is scored in one of two ways: the first refers only to the right answers or *total right* (TR); the second refers to the formula *rights minus one-half the number wrong* (R-W/2) (Ennis, Millman and Tomko 2004). Frisby (1992) investigated the difference between the two methods of scoring and found that only scores from students with lesser abilities reflected a noticeable variable. The results from the Industrial Design group were compared to two sets of existing data sets: the first reflects the standard deviation in comparison to international examples (Table 5) and the second compares findings to national findings (Table 6).

	Community College, Canada (Money, 1997).	**Northwestern State University, USA (Krank, 2003).**	**Cape Peninsula University of Technology**
Year Level	Undergraduate	Undergraduate	Undergraduate
N	181	230	**28**
Mean	21.9	25.1	**24.9**
S.D.	5.7	5.3	**4.8**

*Scores used were "Right Only" - scores for CPUT also reflected as "Right Only"

Table 5: Total Right (TR) Results in Comparison to International Data (Barnes & Du Preez 2011*)*

When the focus group test scores are compared to those of other undergraduate students at international institutions, a clear alignment can be noted. The results are presented in a 'right only' format which does yield a higher result. However, as all three institutions used the same method, the results are comparable. The focus group scored an average correct answer score of 24.9 (out of a total of 52) which translated to an average score of 47%. In comparison, students from an American and Canadian institution, respectively scored 25.1 and 21.9. The standard deviation of the test groups' score was 4.8, which is 0.5 lower than the closest score of 5.3. While the results from the focus group are in line with those from America, it is important to note that since the1970's and 1980's, American (and international) authors have questioned the lack of thinking skills in the American educational system.

The comparison between the focus group's results and those from a 2004 study from the College of Education in Gauteng proved to be quite different (Table 6). The focus group scored an average percentage of 22.73%, well below the 34.72% achieved by the Gauteng group. Both studies reflect the diverse education environment of South Africa. Both tests used the Cornell Critical Thinking Test Level Z, and both were scored using the (R-W/2) scoring method.

[10] The introduction to critical thinking was a 45 minute lecture / discussion based session to all participating students, even though 55% of students indicated that they understood or had previously used the method of thinking.

[11] The Cornell Critical Thinking Test Level Z is intended as a 50 minute exercise.

	College of Education, Gauteng (Lombard & Grosser, 2004)		Cape Peninsula University of Technology	
Level	**88 First Year Student (Undergraduate)**		**28 Second Year Students (Undergraduates)**	
Frequency distribution of Scores for the Cornell Critical Thinking Test	0 to 4	0	0 to 4	5
	5 to 9	3	5 to 9	4
	10 to 14	16	10 to 14	8
	15 to19	36	15 to19	7
	20 to 24	26	20 to 24	2
	25 to 29	7	25 to 29	2
	30 to 34	0	30 to 34	0
	35 to 39	0	35 to 39	0
	40 to 44	0	40 to 44	0
	45+	0	45+	0
Raw Test Scores and Average Percentages of Respondents	**Possible Test Total**	**4576**	**Possible Test Total**	**1456**
	Group Test Total	**1589**	**Group Test Total**	**331**
	Average Percentage	**34.72%**	**Average Percentage**	**22.73%**

Table 6: R-W/2 Results in Comparison to National Data (Barnes & Du Preez 2011)

The low results were surprising, as the current Industrial Design curriculum does include elements which support the development of critical thinking. In theoretical subjects, at second year level, students are required to complete academic essays, reports and critical reviews, and reflective practice is encouraged. In practical subjects, the design lecturers highlight the importance of research, analysis, evaluation and decision making, and reflective practice is encouraged. The low results in the Cornell Critical Thinking test supported the original findings of the Ennis-Weir test - that students were struggling to think critically. A study of a controlled group of American community college students by T. Solon (2003) offered insight which may help explain the situation (Table 7).

In Solon's (2003) study the control group was split into three groups:

- A group taking a course in critical thinking: with 40 hours of class room instruction and almost 80 hours of homework about critical thinking
- a group of introductory psychology students: with critical thinking elements built into the curriculum, with no definitely critical thinking training
- a group of rhetoric students: with no critical thinking elements in the course.

All students completed the Cornell Critical Thinking Test Level Z at the beginning and end of the testing. The results indicate that with explicit intervention, such as the course completed by the Critical Thinking students, students' scores improved by 6.56%. The psychology students' scores also improved, but only by 3.25%, while the Rhetoric students dropped by 0.96%. Solon noted that without clear structure and explicit coursework, student's critical thinking skills are less likely to improve, "The critical thinking course intervention had more impact than the infusion approach." (Solon 2003:33). This scenario may explain the low scores of Industrial Design students – even though the development of critical thought is embedded in the curriculum and teaching and learning practices, it may not be offered in a manner which is suitably explicit and defined.

	Test Group 1 Critical Thinking Course		**Test Group 2** Introductory Psychology		**Test Group 3** Rhetoric	
Time spent developing Critical Thinking skills	40+ hours class time (intervention) 80 hours homework		10 hours class time (infusion) 20 hours homework		None	
Pre-test Results (Cornell CT test Level Z)	Mean	23.76	Mean	23.63	Mean	24.23
	SD	4.51	SD	5.17	SD	5.19
Post-test Results (Cornell CT test Level Z)	Mean	30.32	Mean	26.88	Mean	23.27
	SD	3.67	SD	4.24	SD	5.51

Table 7: Solon's Pre & Post Test with the Cornell Critical Thinking Test level Z (Barnes & Du Preez 2011*)*

Conclusion

The results of the Think tank project have yielded several surprises in terms of test results. What is clear is that any critical thinking skills developed at school level do not reflect in undergraduate scores. The students appear to demonstrate characteristics of their generation, Y. Among these are difficulty in analysing and evaluating information, and also their inflated belief in their own ability. The discrepancy is highlighted here, in that students believe that they *are* critical thinkers, but the scores contradict this. Therefore, although the Industrial Design Department at CPUT plans projects that require critical thinking, analysis and evaluation skills, these are embedded, and not clearly defined. The research suggests that embedded critical thinking challenges in projects are not sufficient (Solon, 2003). Direct and defined coursework may be required for the improvement and development of skills in the students at second year level. To see any real improvement in the critical thinking skills of the students, a specific critical thinking course would need to be included in their curriculum. This is a theory that would warrant further investigation and possible testing. It would also be useful to test students at a different level of study, for example third or fourth year students, in order to compare data. This may reveal critical thinking skills that have developed over an additional year, through working with projects embedded with critical thinking requirements.

Another area that warrants further investigation is the *nature* of the critical thinking tests. While the limitations of language in the South African context have been discussed, it is important to consider the nature of test. It is unclear whether the use of existing tests is *appropriate* to assess the industrial design students' skills. The Cornell Critical thinking test was used in the pilot project, in the absence of more suitable tests. An ideal solution would be to investigate the development of a new non-written test. Further investigation into non-written thinking tests is therefore recommended. A further controversial proposal would be to use existing design project briefs as a form of assessing the embedded critical thinking challenges, and in this instance the scoring of the tests would need to be thoroughly interrogated.

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CULTURAL ACTION FOR CHANGE: A CASE FOR CROSS-CULTURAL, MULTIDISCIPLINARY COLLABORATIONS

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Abstract

Cultural Action for Change began in 2000 as a joining of artists, educators, and student-researchers to assess sustainability and address the impact of HIV within Phumani Paper; a government-funded poverty alleviation program, establishing hand papermaking and craft enterprises across South Africa. Inspired by ideals of empowerment and self-determination, a series of qualitative, Participatory Action Research (PAR) interventions for HIV awareness and action were introduced at six Phumani papermaking workshop sites. Student researchers and participants, with the collaboration of academics from the University of Michigan, were trained in Photovoice methodology to document with photographs and personal narrative the participants' struggles for economic independence. Through iterative processes of reflection and sharing, participants identified shared social action objectives.

Cultural Action for Change (also termed AIDS Action) consisted of arts-based, multi-disciplinary community interventions conducted over five years, and adopted a PAR framework as an approach that seeks to enhance the lives of the participants. The goal of the AIDS Action Intervention was to provide support to, and increase the agency of, participants of the Phumani Paper craft enterprises affected by the HIV pandemic. The aim was to enable the participants to break the silence, to confront the fear and stigma of HIV, and to seek voluntary counselling and testing (VCT), thereby contributing to reducing the number of deaths in their projects and communities. An additional objective was to achieve an increase in productivity and income for the enterprises as a result of greater group trust, information, networking and agency.

The creative strategies that the research teams used for the AIDS Action intervention were Photovoice and Paper Prayers. The impact assessment conducted revealed that members of the Phumani Paper groups see themselves as individuals who have acquired skills that can transform waste into objects of beauty and have understood their own sense of agency to effect personal and organizational change.

Key Words: *visual methodologies, participatory action research, community engagement, multi-disciplinary*

Introduction

In 2005 the Ford Foundation awarded a grant to the University of Johannesburg to implement a five-year AIDS Action intervention. The goal of the AIDS Action Intervention, subsequently called Cultural Action for Change, was to provide support to, and increase the agency of, participants of the Phumani Paper craft enterprises affected by the HIV pandemic. Some of the craft enterprises experienced staggering losses of up to 50% of their membership through the devastating impact of HIV/AIDS. The aim was to enable the participants to break the silence, to confront the fear and stigma of HIV, and to seek voluntary counselling and testing (VCT), thereby leading to a reduction in the number of deaths in their projects and communities.

This paper argues that community engaged learning requires a participatory, praxis-led and multi-disciplinary approach to research and engagement. The multi-disciplinary approaches aimed to inspire the capacities for inquiring, sharing, dreaming a better future, and for planning actions that transform silence and isolation into articulated goals and collaboration.

Theoretical framework for community engaged learning

In an attempt to clarify and contextualize community-based research in relation to theory and practice, I have adopted two concepts: 'participatory paradigm' and 'praxis' as defined by Marcia Hills and Jennifer Mullett (2000). Expanding on Peter Reason's (1994) discussion of 'participatory paradigms', the authors offer various guiding principles for community-based research. On 'praxis' or the relationship of theory to practice in community-based research, Hills and Mullet acknowledge that theory is often talked about as if it belongs exclusively in the world of the academy. They define theory as an explanation of phenomena; it is implicit in all human action and is therefore necessary in developing evidence for community-based practice. In contrast to orthodox science, community-based research does not see theory as something that is known and that 'informs' practice; as Max Van Manen says: "Practice (or life) comes first, and theory comes later as a result of reflection" (Van Manen 1990:15). Community-based Participatory Action Research (PAR) is based on the concept of praxis that is dialectical. It is a reflexive relationship, in which both action and reflection build on one another.

> In community-based research, it is the cycling through the iterations of action and reflection [that] creates praxis, and concomitantly generates evidence for future practice. This process grounds practice in theory, rather than applying theory to practice (Carrol, Hills and Mullett 2007:128).

Engagement in the process of research allows students and participants to develop new ways of thinking, behaving and practising. The paradigm of praxis/participation is central to the theory of PAR. As defined by Peter Reason, PAR is a 'coming to know,' rather than a formal, traditional research methodology. He defines PAR as a methodology for an alternative system of knowledge production, based on the people's role in setting the agendas, participating in data gathering and analysis, and in controlling the use of its outcomes. PAR emphasizes the political aspects of knowledge production, creating knowledge directly useful to a group of people. The research process involves full reciprocity, so that "each person's agency is fundamentally honoured, both in the exchange of ideas and in action" (Reason 2005: 324, 339). As this methodology has become widely adopted, it has in due course been revised. For instance, activist educator Ernest Stringer (1999, 2008) has expanded Reason's definition of PAR to include the key outcome of improving the quality of the lives of the participants. He writes: "Community-based action research is a collaborative approach to inquiry or investigation that provides people with the means to take systematic action to resolve specific problems" (Stringer 1999:17).

Cultural Action for Change, a five-year arts-based community intervention, has adopted this framework in an attempt to link to people's history, culture, social practices and emotional lives. Such research seeks to shift the balance of the research situation so that it can enhance the lives of those who participate. Accordingly, Stringer and others have proposed that programs be evaluated not only according to their technical or functional worth, but also according to their impact on people's social and emotional lives. It is my contention that the emotional responses conveyed through narratives by participants in the course of PAR interventions are deepened through the use of visual arts methods, which provide a critical component when evaluating aspects of sustainability and resilience. Participatory Action Research methodology requires scholars to establish evaluative criteria that can measure the effects of the research on intangible values such as taking responsibility, building commitment and ownership, stimulating creativity and benefiting the public good. Value should also be given to human dignity, care, justice and interpersonal respect.

Context and background to Phumani Paper

When I began teaching at the former Technikon Witwatersrand (TWR) in the mid-1990s, the research arena was wide open, and the agenda for transformation had been initiated and supported by a progressive Dean. At that time, the National Research Foundation (NRF) funded research projects that had redress and community relevance as their key components. The research activity I initiated, papermaking for economic development, thrived in this environment. The government offered funding opportunities for research projects in the newly defined 'cultural industries' sector. Hand papermaking was one such industry, and the first two Master's students developing their research into hand papermaking, Bronwyn Marshall and Mandy Coppes, sought outside assistance from other disciplines and external experts in the field, as there was no precedent for this kind of research in South Africa. This opened the door to innovative knowledge production through collaboration and multi-disciplinary methods of investigation. The broader context for Phumani Paper and Cultural Action for Change is developed in my PhD thesis (Berman 2009).

In 2000 I received a generous grant from the government to use research to create hundreds of new jobs in hand paper crafts. This Papermaking Poverty Relief Program became Phumani Paper. Furthermore the NRF awarded full research bursaries to four Master's students and support to four BTech students in this new activity area each year from 2000 to 2005. The program has since been renewed, with three new Master's students being supported in activist and community arts and four BTech students receiving support as research assistants annually.

The term 'cultural industries' was defined and framed by government in the White Paper for Arts, Culture, Science and Technology (1996). This area opened up new opportunities for research projects in the arts sector. In the absence of a pre-determined methodology for the research process, the creative space of inquiry and the drive to make a difference to the poorest of the poor facilitated a dynamic and fluid process of discovery. As a result my students and I operated in an environment that felt like a creative incubator that was non-prescriptive and was not policed by bureaucracy, nor constrained by academic conformity. We were allocated a basement venue in the deteriorating Marydale building on campus, where other faculty members refused to teach, as it flooded when it rained and was very cold in winter. Down in the basement my printmaking students worked not just at the grass roots, but in the muddy ditch of emerging knowledge, stripping bark off various plants and carefully recording the optimal procedures for turning those plants into paper. They proved to be outstanding researchers, and four master's student research projects have been essential to establishing sustainable processes within the Phumani Paper enterprise. These include the use of cotton and sisal for archival paper production (Marshall 2003), the use of invasive plant species for sustainable cultural development (Coppes 2003), and paper-based technologies such as paper-clay (Ladeira 2004) and cast paper pulp for three-dimensional craft production (Tshabalala 2005).

In sum, this project was engaged in research that was directly applicable to the public good. The stakes were high. The Department of Arts Culture Science and Technology (DACST) grant of R3 million tasked the research unit of the former TWR with establishing at least 460 new jobs in this new cultural industry in its first year of implementation. The teams consisted of postgraduate students, BTech research interns, papermakers with expertise, community facilitators (the regional co-coordinators hired by the Papermaking Poverty relief program (PPRP) to set up and manage the projects), and local community artists who all worked together There was no hierarchy of privilege or knowledge. White and black university students were learning with, and were supported by, their community-based counterparts in rural and township community centres. Knowledge was shared, methods experimented with and invented, and an exciting world of multidisciplinary and multicultural opportunities was opened up to all involved.

Subsequently, two of these Master's students (Coppes and Marshall) embarked on internships with the Agricultural Council to research plant fibres, and were awarded research grants to visit facilities in Belgium and Japan to study print and paper. Another Master's student (Terence Fenn) received a fellowship to Australia to do a Community Research Master's program in multi-media. Further, through the NRF Visiting Scientist/Mentor grants, I was able to arrange for all of the students and community artist collaborators to participate in intensive workshops with visiting expert papermakers from the United States, Europe and the Philippines, as well as a month-long intensive pineapple fibre training with a Japanese shifu-master. Further collaborations with papermakers from the United States as well as local artisans led to the design and construction of new equipment that was continually adapted to our evolving needs.

Each of the Master's students' research projects was involved in investigating and devising new technologies for craft development to enhance income generation within Phumani Paper projects. These research projects, while not designed specifically as Action Research investigations when they were initiated, exhibit the essential characteristics of Action Research in that they "improved the quality of the lives of the participants" and facilitated ways for people to reflect and act to address specific problems (Stringer 1999:17). The Papermaking Research and Development Unit's (PRDU) interdisciplinary approach was central to knowledge production, but unfortunately, interdisciplinarity was not welcomed in the increasingly conservative university climate. For some students, however, the risks associated with inter and cross-disciplinary collaborations were valuable. The first two Master's students developing their research into hand papermaking, Coppes and Marshall, established in-house links with the Departments of Engineering and Chemistry. These departments assisted in assuring the use of proper scientific procedures, and recruited students for product development projects from Graphic Design and Industrial Design. The value of working across

disciplines went further than expanding the knowledge base and capacities of all of the students concerned; most of them received funding, internships, travel opportunities and job placements through and beyond their studies. As researchers, these students were fully engaged and inspired by the challenge of their groundbreaking efforts in a new field and they produced substantial research. Each spent two to three years of dedicated energy in the field before setting out to write up their research findings in their Master's papers.

The guiding philosophy of all members in the PRDU embodied the values and ethics of collaborative, participative, and consultative processes that worked towards the empowerment and ownership of the research by community and university participants. The vision was to facilitate the establishment of micro-enterprises that could generate livelihoods for community members. In line with the government objectives of the funding for Phumani Paper, 21 hand papermaking projects were established in the first two years of implementation, between the end of 1999 and 2002. Currently in 2011, ten of these enterprises are still surviving with varying levels of success.

The students were not 'out there' researching 'the other', but attempting to co-design and co-produce new knowledge from local resource bases within each of the Phumani Paper groups. Each group had different needs, different local vegetation suitable for paper, and different degrees of access to resources such as electricity, water, transport, and raw materials. Each unit therefore needed particular attention to issues of design, technology and training that relied on the needs identified by the participants and trainers. All new paper and product research was transferred, tested and owned, or rejected, by the community participants. Our experience of what we termed at the time 'community-based research' was instinctive, experiential and imaginative. The success of this approach to research is reflected in the quality of the student/artist graduates. Most are still fully engaged in their own careers as educators, trainers, and/or community facilitators, passing on their commitment to using the arts for economic and social upliftment.

Cultural Action for Change

The Ford Foundation funded an intervention from July 2006 to 2008 that brought three organizations – Artist Proof Studio, a community art centre; Phumani Paper and the University of Johannesburg – together in an ambitious program. Following the submission of the impact assessment and findings, the Ford Foundation extended its funding for two further years to July 2010. The overarching program is titled Cultural Action for Change and has had three iterations over five years. An early pilot collaboration (which was separately funded) was undertaken by scholars and students from the University of Michigan in July 2005 and July 2006, and was called New Partners/New Knowledge. This was an intervention in six of the Phumani sites that implemented and tested the methodologies used in the subsequent AIDS Action program which was a two-year roll-out of the program to sixteen of the Phumani Paper sites from August 2006 to June 2008, which was titled the AIDS Action Intervention. In July 2008 the Ford Foundation funded an extension of this grant to include a broader outreach with a new methodology – community and visual mapping which linked to another Master's student's research (Hlasane 2008). Artist Proof Studio, active in HIV and AIDS awareness campaigns though the visual arts, subsequently used its trained teams to expand the outreach of this new phase into broader sectors, such as schools and support centres, using the methodologies developed in partnership with the University of Johannesburg and Phumani Paper. This third phase called Cultural Action for Change is the name that the program has also adopted to describe the whole five-year program.

Aims and objectives

The goal of the AIDS Action Intervention was to provide support to, and increase the agency of, participants of the Phumani Paper craft enterprises affected by the HIV pandemic. The great majority of these workers are women. The aim was to enable them to break the silence, to confront the fear and stigma of HIV, and to seek voluntary counselling and testing (VCT), thereby reducing the number of deaths in their projects and communities. This was an intensive intervention that aimed to provide support to the groups and individuals through the multi-modal workshops, to initiate awareness of the value of VCT, and to establish links with local clinics, counsellors and medical support. In this way each enterprise could gain the capacity to access support or refer others to support within their own communities. The program did not claim to reduce the infection rates of HIV, but to reduce the fear and stigma surrounding the pandemic, so that the participants could act on options available to them.

An additional objective was to achieve an increase in productivity and income for the enterprises as a result of greater group trust, information, networking and agency. The Phumani Paper program intervention aimed at empowering the groups themselves to better manage their enterprises, whereas the Phumani Paper national office and regional staff were challenged with investigating and accessing markets.

Finally, the academic component of Cultural Action for Change was structured to test the efficacy of participatory learning that employs students as researchers and teachers as well as learners through PAR methodology. What is gained academically from engaged learning? What is the unique role of the creative interventions of Photovoice and Paper Prayers in this process? The fundamental challenge the research teams faced in engaging research with Phumani Paper groups revolves around the following questions: How can this endeavour maintain an equal exchange of value and not result in exploitative power relationships? How does this research resist the perpetuation of the norm, which often involves researchers using institutional research resources to exploit a community to further their own career development?

The success of this research is dependent on its meeting the community development priorities. The project proposes that the visual arts can play a valuable role in connecting and integrating new knowledge transmitted from the community participants to the researcher, and in redefining the researcher as an activist and facilitator for catalysing social action. In sum, Cultural Action for Change bridges the divide between engaged, experiential and participative learning, and theoretically-based academic research.

AIDS action and gender: HIV and women's empowerment

The trauma experienced by the members of Phumani Paper rural projects across the country as a result of the illnesses and deaths resulting from HIV/AIDS was significant. The visually-based methodologies of Paper Prayers and Photovoice provide opportunities to 'break the silence' in a safe and supportive environment. For some groups the resistance to engaging in discussions about HIV and AIDS is initially high, and participants feel threatened to disclose or share their status for fear of gossip or marginalization. However, that fear dissipates when discussing a photograph or artwork which creates a mode for describing personal feelings in a non-threatening way. The conceptual view of using artistic methods in healing and teaching was corroborated strongly by various stakeholders in the program, such as those involved at a program level as trainers, coordinators and managers. As one HIV counsellor stated:

> 'It has done so in a way I never expected. I have seen the most powerful articulations of HIV-related issues than in any other intervention I engaged in.' and '... if empowerment means being able to make more choices, then yes, I think these interventions contribute to empowerment' (Du Toit report 2007).

Methodology

The approach of PAR is the grounding principle of the methodology of the AIDS Action interventions in that the knowledge systems, inquiry skills and validation procedures are structured to ensure and enhance the quality of knowing. This capacity of knowing is core to initiating social change that emerges from the community participants.

The multi-disciplinary approach does much to 'ground' the social sciences, (such as sociology, anthropology and development studies) in reality, because each discipline adds value to another. In the AIDS Action intervention the research team found that all of the stakeholders regarded interdisciplinary collaboration very favourably, not only for their own practice, but also for the growth of their students and trainees. Mitchell argues that visual arts-based methodologies have potential both for engaging people in finding solutions, and for deepening understanding of the interplay of knowledge, behaviour and attitudes within a social context. She asserts: "This work forces us to look again at what the purpose of research in the social and human sciences in South Africa should be, and how it should be evaluated. Can it provoke change? Can it afford not to?" (Mitchell 2006:240).

For the purposes of this article, multi-disciplinary research is not simply cross-disciplinary within the academy, but multi-sectoral, cross-cultural and multi-modal, in that it involves many sectors of society in engaged, interactive endeavours using a range of methods to foster social change. The team of

researchers, artists and community activists worked from the assumption that visual and cultural literacies could compensate for the possibly limited ability amongst many participants to express thoughts and ideas using a linguistic voice.

Visual methodologies: Photovoice, Paper Prayers and community mapping

The creative strategies that the research teams used for the AIDS Action intervention were Photovoice and Paper Prayers. Photovoice uses the photographs made by individuals in the community to produce narratives about their lives (Wang and Buris 1997). Paper Prayers, introduced as a nationwide campaign for HIV/AIDS awareness by Artist Proof Studio in 1998, uses simple printmaking techniques to encourage individuals to express their emotions about loss and illness. Paper Prayers workshops have proved to be an effective method of teaching AIDS awareness, sexual practice and behaviour change using artistic methods. The use of two different visual strategies helped to ensure that the majority of the participants found a vehicle to articulate their concerns, fears and visions for the future. The rationale for the choice of these two methodologies was based on the proven record of success they had demonstrated in other applications. Community mapping is used as a visual tool in the third phase of the intervention. This methodology has been adapted to develop action plans for improved access to healthcare and to resources and markets for the enterprises. The action plans are translated into a visual process of wall-mapping, onto which a range of images, texts, photographs, references and action plans are collaged. The mural map in each enterprise provides a very direct way of monitoring change and increased productivity.

Assessment methods

The rationale for the Cultural Action for Change intervention is linked to the quest to provide evidence to support the contention that the visual arts are a valuable tool for creating social change. The program has developed a range of methods to evaluate impact, because the measuring of impact is often a challenge for arts-based programs. Funding agencies want to know that their funding criteria have been met, and the academy wants to know that the research is credible and verifiable, and that scientific research procedures are being followed. The Ford Foundation funding facilitated the contracting of an independent social science researcher to use the discipline's 'hard data' approach to measure impact alongside the 'softer' arts-based participatory methods of visual arts activities such as the use of Photovoice and Paper Prayers to generate narratives. This mixture of approaches has come together in the latest intervention through the use of tools such as social and visual mapping and can be used by each community site to monitor and manage their own research data linked to action plans.

Some findings: visual outcomes as research evidence

The results of the pilot project demonstrated that artistic forms of expression such as Photovoice and Paper Prayers offer a rich and intense form of inquiry, and are effective in facilitating the expression of voices that have not been heard.

Artists are not generally trained in data collection and analysis, but I have found that visual methods of engaging creative thinking provide a useful means of gathering documentary evidence. The resulting materials and outcomes enable both the researchers and participants to analyse and draw useful findings from the themes elicited by the narratives. The visual narratives from the pilot and subsequent roll-out of the interventions in each of the sixteen sites have been collated and archived. Some of the visual and narrative texts have been included in the needs assessment compiled by the contract researcher Lilo Du Toit, from the Department of Anthropology and Development Studies at the University of Johannesburg; some have been included in the site workbooks and others published in an exhibition catalogue of visual voices (Antonopolou, Berman and Sellschop 2008). In aggregate, they demonstrate a marked increase in the Phumani Paper women's awareness and empowerment around issues of HIV/AIDS. In addition, the project exemplifies Amartya Sen's notion that the leadership of women is a crucial aspect of 'development as freedom' (Sen 1999: 202), as, in addition to providing information to assist HIV-positive women in choosing options for treatment and counselling, this intervention focused on the changing agency of women that derives from also improving their economic and social conditions.

The research methodology, Participatory Action Research, provided a recognized and progressive research context for students and facilitators, and helped secure a successful pilot project. Close collaboration between the facilitators and the project members ensured that knowledge production remained non-hierarchical and that the members' voices were accurately recorded.

The baseline and mid-term impact assessments have also opened up a range of opportunities for continuing research. For example, four Master's research projects under the community-based arts activity area expand on the research activity that investigates the roles of the visual arts in creating social change. Other examples of cross-disciplinary collaboration include participation by the Faculty of Humanities students. Dr Naude Malan from the University of Johannesburg's Department of Development Studies Department has introduced an honours module on participatory democracy. During the course, first initiated in 2008, each honours student investigates particular organizational structures of a local Phumani Paper craft enterprise and their levels of economic participation of the groups though arts and culture.

The success of the AIDS Action Intervention met the objectives of the Ford Foundation grant of reducing the fear and silence in each site, and I am aware of four HIV status disclosures that took place during the training interventions of members of groups who previously felt shame and had kept their HIV status private from the groups. Others in the groups who qualified for anti-retroviral treatment have initiated treatment since the intervention. An additional objective that was proposed to the Ford Foundation was to achieve an increase in productivity and income for the enterprises as a result of greater group trust, information, networking and agency. The increase in income however has not as yet proven to be consistent (Du Toit 2007: 38). This subsequently led to the funding and program support for the next phase of the intervention, to improve market access and increased productivity for Phumani groups leading up to 2010.

Conclusion

The decade of research activity of the PRDU has led to five successful years of intervention under the umbrella of Cultural Action for Change. In 2011 the NRF established a new knowledge field called the Community Engagement Programme (CEP) and has funded my research programme of arts-based approaches to development for three years (2011-2013). This project consists of a community engaged learning and research module for the BTech Visual Arts programme. In 2011 a group of ten BTech students elected to participate in multi-disciplinary collaboration using Photovoice, Paper Prayers and mural painting with schools and clinics in a rural poverty node called HaMakuya village in Limpopo Province. This opportunity consolidates and expands participatory and cross-disciplinary approaches of arts-based methods for community research and engagement. The case of Cultural Action for Change demonstrates that these approaches inspire the capacities for mutual learning and exchange, planning actions that transform silence and isolation into articulated goals and promote agency for personal and social change.

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Short Biography

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AN EXAMINATION OF STUDENT FORMATIVE ASSESSMENT AND FACE TO FACE FEEDBACK IN STUDIO-BASED DESIGN EDUCATION & ITS RELATIONSHIP TO STUDENTS' LEARNING EXPERIENCES

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Abstract

Over the last two decades we have seen the designer's role and brief broaden. Through the introduction of the personal computer, the Internet and wireless technology and social networking, we all have experienced dramatic changes, especially in our rapport with space, time, the physicality of objects, and ourselves as individuals. Today, with the expansion in student numbers and a reducing resource in Higher Education how the studio-based design pedagogic community responds and adapts its teaching and learning methodologies in response to these rapid developments and effectively utilises feedback opportunities to inform curriculum is key in ensuring that students understand and are equipped for the profession they are entering.

Although there has been a good deal of literature around feedback, assessment and learning in pedagogic research in Higher Education – (Askew & Lodge. 2000; Baume, Yorke & Coffey, 2004; Biggs, J. 2003; Black & Wiliam, 2003; Harlen & James, 1997; Rust, 2002) together with a growing research body of work around assessment and feedback in studio-based art and design (Austerlitz & Aravot, 2002; Blair, 2003/2004/2006/2007/2009; Davies, 2000/2002; Crooks, 2001; Edstrom, 2008; Shreeve , Baldwin, Faraday, 2003; Blythman & Orr, 2005; Orr, 2007) students do not seem to have a common definition of feedback - when they are receiving this and how this informs their learning. What is it about the particular nature of studio-based design learning and teaching which continues to fuel this debate?

The UK National Student Survey (NSS) - a questionnaire filled in by all final year undergraduate students about their learning experiences on their course – indicates that across all disciplines there are issues in relation to feedback and assessment and art and design students, in particular report they do not think they get enough feedback. These issues could be around structures and processes we use such as the relationship of assessment strategies to learning outcomes and may be about faculty and student perceptions and understanding as well as actual practices.

This paper shares the reported findings of a small research project, funded by the UK Art, Design & Media Subject Centre of the Higher Education Academy (ADM-HEA) exploring student assessment delivered through both the formative and ipsative feedback available to students. The project was researched and analysed by myself and my colleague Allan Davies.

Key Words: *feedback, assessment, understanding, interpretation*

Introduction

> Teaching involves gaining students' understandings in order to further their understanding. (Knewstubb, B. & Bond, C.2009: 180)

This small one year project, was researched by myself and my colleague Allan Davies who has written widely on assessment in Art & Design. The project was funded by the Art, Design & Media Subject Centre of the UK Higher Education Academy (ADM-HEA). The project explores how student assessment in art and design is delivered through the formative and ipsative feedback mechanisms available to students. We wanted to take a 'snap shot' of how the discipline areas of art and design

currently ensure that students understand and learn from the formative feedback they are given in relation to their project/module learning outcomes? This paper reports on the project and findings which are published in the online ADM-HEA Networks magazine and will be available on their website. www.adm-heacademy.ac.uk

Previous research studies carried out both within and outside the art and design sector, (Blair, 2006; 2008; 20010; Davies, 2000; 2002; Crooks, 1988; Fleming, 1998; Kent, 2005; Oak,1998; Sadler, 2005; Askew & Lodge. 2000; Baume, Yorke & Coffey, 2004; Biggs, J. 2003; Black & Wiliam, 2003; Harlen & James,1997; Rust, 2002) find that there can remain confusion and often a different interpretation of feedback by students and teachers.

Cannatella (2001:319) suggests that this could be because;

> The particular character and activity that goes into making of art does not fit comfortably into any system of general assessment criteria.

The project investigated how we, as discipline academics, are ensuring assessment feedback is testing and also ensuring enhanced student learning?

Formative assessment and feedback is a well-established and integrated part of art and design curricula. The atelier model, where a small group of students work closely with an artist or designer in order to develop their skills and knowledge, has been characteristic of student learning in art and design for many centuries. With the explosion of art schools in the UK and Europe after World War 2, the 'crit' became a recognised form of providing critical engagement (Blair. 2008; Blair. 2010; Percy, 2004) and of providing feedback for students, particularly for those in larger groups. What distinguishes the 'crit' from other forms of feedback is the public display of student work that enables accessibility and an opportunity for others, not just the teacher and student, to engage in discussion of the work. A less formalised strategy for critical feedback in art and design, which appears peculiar to the discipline, was 'studio cruising' (Ashton, P, 1997; Swann. 2002) where the tutor makes him or herself available for informal discussion during an ongoing project. Here usually the student initiates the conversation when they require feedback on their concepts or processes.

Although feedback in the disciplines has been a long established practice, formalization came during the end of the last century (1998-2000) when subject reviewers for the UK Quality Assurance Agency (QAA) started asking how students were supported in their learning. This revealed that art and design was well prepared to provide formative support but that the concept was not always fully understood.

> Studio-based activities are a key feature valued highly by students and staff. They provide for regular individual tuition and promote an informal but intensive interactive learning environment. Close working relations are engendered in studio situations, with staff and students sharing experiences as equals in the discussion of individual students' projects or practice. A distinctive feature of the subject is the group critique, where students present and discuss their work with their peers and tutors. These, and the individual tutorials that also address current visual work, facilitate reflective learning and the development of key skills. This integration of key skills and subject-specialist material promotes effective learning. However, the reviewers express concerns that students do not always understand these arrangements for the development of key skills, and the criteria for assessing these skills. (QAA Subject Overview Report: Art and Design 1998-2000)

More recently with the explosion in student numbers together with a more diverse population of student experience/skills – due to the demise of many foundation diploma pre degree courses, traditional practices have been difficult to implement. Peer and self-assessment strategies have been adopted sometimes more as coping strategies which utilise the manpower of the students to complete the assessment rather than being perceived as a strategy for improving learning. The use of technology has also come to play an important part in supporting formative feedback for students.

These strategies have not always been successful – the National Student Survey (NSS), a questionnaire survey done by all UK final year degree students about their course experience, has highlighted that in Art and Design there remain issues in relation to feedback and assessment in the sector that need to be investigated and addressed.

The project

The methodology we used was two-fold. We sent out an online questionnaire to all art and design staff on all the sector mailing lists in the UK as well as our individual contacts. This was very well responded to and also resulted in some telephone and face to face conversations with individual staff who wanted to share their practice and thoughts. We also carried out some small focused studies. Three art and design institutions were selected and interviews were held with groups of staff and students in these institutions.

From the questionnaire, we asked teachers about how they monitored the student learning experience. From their responses, together with responses in interviews, we were able to construct a set of basic categories which identified both formal and informal approaches within both individual and group scenarios.

	Formal	**Informal**
Individual	Regular mini-reviews Tutorials Strictly documented visual progression One-to-one meeting at end of semester Personal Supervisor system Short explanatory /reflective texts Reflective journal/diary	Discussions with individuals Review folios Conversations at the end of lectures/studio Self-reflective exercises
Group	Module questionnaires Short formative surveys Staff/student liaison committees Programme committees MEQs (Module Evaluation Questionnaires) at end of module External examiner comments NSS (National Student Survey) Group seminars Peer-support	Informal discussions with students Staff/student focus groups Teaching teams discuss how projects are fairing Pathway forum meetings Mid module feedback sessions Discussion forums on Study Space

Table 1: Range of monitoring elicited through responses

In asking teachers how they know that students have understood the feedback they have received, we found there were a number of basic structural variations.

Non-structural	**Semi-structural**	**Structural**
We don't have a way of doing this Not as effectively as we could Difficult, the only check is another formative feedback point Not sure we do	Usually through one-to-one tutorials Discuss it with them Student blogs Peer debate Discussion in individual and group tutorials Set aside feedback time to ask them questions Ask students to explain what the feedback was about Observe and monitor group discussions Brain storming/mind mapping Evidence in their work	Followed up at next tutorial Feedback form includes a 'what I did next' section One-to-one tutorials specific to feedback Subject tutorials Invite student to submit a plan of action Summary discussion post delivery Invitation to query feedback in tutorials In crits here, written feedback is discussed End of semester individual tutorials Discussion of notes following previous tutorial

Table 2: Variation of checking student understanding

When asked whether there were other issues related to formative feedback they would like to share, respondents appeared to formulate their answers from either a student focus (it was a problem for the students) or a teacher focus (it was a problem for the teacher).

Student focus	Teacher focus
Occasionally, students respond to feedback as directive, particularly if the comments are made by senior staff or an external visitor. Identifying how certain skills are key skills for employability Informal feedback is crucial to my teaching – keeps lessons fresh Written feedback is not always understood by the students – can be demoralising Time Students need to know that they are receiving formative feedback or they don't know what it is Ensuring staff are fair and treat students equally	Large projects can involve lengthy feedback Increasing student numbers is a problem The language can be too formal Inappropriate forms used by university can be counterproductive in art and design Written feedback is not always understood by the students – can be demoralising Time Multi-sensory feedback (They) muck up crits and assessments

Table 3: Student focus and teacher focus issues

Understanding of formative assessment

The analysis showed that students understand both the term 'formative assessment' and its meanings in varying ways. Some students interviewed claim not to know about it until the practice is described to them. Occasionally, they recognize it under some other expression such as 'interim' assessment or it might be embedded within the familiar critique practices and not specifically identified. Other students recognize the term immediately since the expression is used quite explicitly as a feature of their learning.

> 'I don't know if it's because we've been introduced to the word like formative feedback, but XXX was like, ok this is your formative feedback '

Teachers, themselves are sometimes cautious about using terms explicitly:

> 'We don't mention the word assessment at any point but basically, we say to students put an exhibition of your work up in that room and then, as a group, they look at the work, the tutor leads a student discussion about the work as well. '

Nevertheless, when the broad features of the practice are outlined to them, some students still express uncertainty about feedback's purpose and value.

> 'I don't think they grade it, but they will tell you verbally, like if you carry on at this level you will probably get this grade, or you can improve and get another grade. That's what I would have thought it was. '

> ' …it can be a form of scare tactic to basically get the student to get their arse into gear.'

Feedback and marking

Formative assessment is conventionally seen as a support device to help students to reflect on where they are and what they have to do to successfully complete the project. The use of marks in the formative process is therefore somewhat controversial. Some teachers have rationalized this in their approach to assessment and feedback;

> '..because I think there's a danger with formative assessment that, if you do give it a kind of mark, I think you could lose that guidance aspect to it, because it is a guidance. It is a kind of thing you

> could develop a bit better, whereas if you are trying to give it a mark then you can't; you have to be critical there and then. It's not formative then, it becomes summative.'

However in some instances marks or grades are utilized, as revealed by this student;

> 'So at the crit you'd get verbal feedback from the tutor and whoever else was running the project, and your peers, and then on the next day…there'd be listed everyone's names, a little sentence or two next to your name, and then your formative grade. So you could go, I don't really need to re-do that project cause I got a Pass Grade or I have to look at that one again cause I got an excellent so … '

There is also the danger of students' taking a strategic position as the comment below illustrates.

> You always want to see what everyone else has got to compare yourself with other people. And then from that you just start getting obsessed with the grade and not how you can get that better grade. I think if we had, as XXX said, kind of a written thing as well, or even just scrap the grades and just give us the written feedback.

Feedback, outcomes and assessment

> If students are to learn desired outcomes in a reasonably effective manner, then the teacher's fundamental task is to get students to engage in learning activities that are likely to result in their achieving those outcomes….It is helpful to remember that what the student does is actually more important in determining what is learned than what the teacher does. (Shuell, 1986: 429)

When asked about their understanding of the relationship between the formative feedback they were receiving and the learning outcomes and assessment criteria for the module, some students expressed uncertainty.

> I think it's usually about the process of design, but it's nothing to do with, yes you developed that skill, or yes you didn't, or maybe you did it but not completely. There is nothing, no connection with that to be honest.

A more cynical view that was expressed by one student stated

> Learning outcomes now are pretty much all the time are the same. There's one sentence, 'We want you to develop the skill of designing blah blah blah.' That's it. So I don't know how it links with the feedback.

The dilemma revealed by this apparent detachment of the students from the formalized and bureaucratic aspects of their learning experience, was captured by the comment of this student;

> I think one of the most common complaints I've heard, just generally on the course I was on last year was, 'Oh this lecturer wanted me to do this but then this tutor told me to do exactly the opposite…' I mean, I think it's inevitable within an art course that obviously it's going to come down to personal taste, but I don't really know what you can do…

Quality of feedback

Although there were dismissive comments about the feedback they received within their programmes this did not mean that students do not value the comments of their tutors.

> Especially because the point of formative feedback is so that it's something that you can build on, that it can help you move towards producing a better result, whereas if your feedback hasn't been constructive, like for example last week, when we were having tutorials, loads of people were just being told to rearrange their research, whereas they weren't told why or why they were rearranging…

Another student was very clear about what they wanted from feedback.

> I don't mind if say a tutor spent five minutes with me and twenty with someone else, I don't really care how long they spend as long as what they say to me is constructive.

Interestingly, students' perceptions of the values teachers place on formative feedback is illuminating and somewhat dismissive.

> For them it's just a chat. But for us it's our only tutorial, once a week for this whole project, that's all we're getting. We're like hanging on to every word they're saying whilst they're just kind of, you know, say whatever.

However, it is evident that teachers do take feedback seriously and have challenges of their own, especially with the increase of numbers and decrease in contact time.

> One of the problems is that the written feedback often requires some verbal feedback after that, and, although it's not always identified by the student straightaway, you realise that you needed to explain that in a slightly different way. You thought you'd explained it well, but actually there always needed to be a follow-up session.

Feedback as critique

Some teachers and students view feedback as not only providing constructive support but also see it as the opportunity for students to develop the critical skills within their professional discourse. This goes beyond the notion of connoisseur, or the ability to appreciate the characteristics and language of the discipline, to that of critical participant who seeks to articulate judgments through critical disclosure (Eisner 1976). As this teacher comments;

> I think that's an important part because I think there is this notion of being critical. I think within a review type situation, like tutorial guidance, but obviously an assessment is much more critical, it's the work there and then, as it is, and I think that's probably a crucial thing for students to understand.

Percy (Percy 1996) argued a similar case,

> By participating in discourse, students engage in a critical self-reflective action in which they seek to convince their audience and themselves of the validity of their position, and it is this activity which is central to their future success in the professional world of designing.

Equally, students not only value crits as the opportunity to become more involved in critical discourse they would also welcome the opportunity to learn how to do it;

> I think it would help you as well to learn how to crit, because I think that's a really good thing to have.

Time and Timing

Two key features which were identified in the study by both students and teachers as important were

- the need for appropriate time to conduct the feedback and
- the appropriate timing of feedback.

Although some students commented on there being insufficient time for the feedback to be meaningful, other students observed that there are instances when too much time is spent on the crit sessions,

> But it's also those crits where they go through every piece of work and for the first hour or so it's good; people are contributing. But by the end of the day, it's unfair on those people who haven't had their work seen because everyone else is tired so they're not going to be as responsive to your work.

Students also highlighted that, although feedback from their tutors was provided, often it came too late for them to act upon it.

> We did four-weekly rotations, so we'd hand in every four weeks but we'd never get our marks every four weeks. We would hand in and then start a project the next week, but you wouldn't get your mark back until four weeks later

Feedback structures

Inevitably, given the increase in class sizes over the past decade, strategies have been adopted to overcome the challenges of offering the same provision with less staffing. Self- and peer assessment techniques have been adopted, some willingly in the belief that encouraging students to participate in judgment making with their colleagues provides higher quality learning outcomes, some reluctantly as coping strategies to deal with the overwhelming numbers of students.

In many instances, students saw the benefits of collaborating with their peers;

> In our groups there were about 7 or 8 of us. And then collectively we all decided on our own marking criteria, so some groups had marking for, I don't know, how much work they did or, if they turned up in a group meetings and things like that. So we all decided in our groups what we were going to set as our criteria so that we all understood…We had the assessment meetings every week with the tutor, so we could sort out, you know, just so it would help us understand where we were going with it and we did practices as well so that we could know where we were going with it.
>
> …for example, we'll have a group tutorial between one tutor and, let's say twelve of us, that's so much more helpful than sometimes just having one just with the tutor, because you'll get all these other people who will just think of something while they're there.

It is also evident that one-to-one encounters continue to happen and are still appreciated by students;

> I like to be with people face to face, because then they can answer questions, but if you've got a tutor who you don't like, they don't understand your work, and if that's the case, it is a bit hard. But then we are given the opportunity to go to a drop-in with one of the tutors on a Monday, or something, and whenever you want you could arrange a tutorial with any of the other tutors.
>
> I think it's good because you tend to get a better impression of what they actually feel about certain things, whereas if it's written you can't get that sort of impression.

Feedback and online support

Students although not resistant to using technology instead of face-to-face contact with their tutors have identified some shortcomings;

> I think it's good for things like portfolios and pdfs, but when you want to just bring in one project it's a lot easier for you and the tutor if they see it live. Especially if it's like 3D and you've got supporting work, and bring research and things. It wouldn't really work to have it online.

Despite the institutional arrangements for on-line learning and support, teachers have developed alternative forms of virtual communication with students.

> The head of our year used Facebook instead to communicate everything, and it was just so much clearer and everyone knew what was happening, like every day because you'd just join the group and you could email them back, whereas on StudentSpace it's really harder to sort

Conclusion

Our research question asked: how do the discipline areas of art and design ensure that students understand and learn from the formative feedback given in relation to project/module learning outcomes?

Our findings suggest that, whilst formative feedback is now a common feature of the student learning experience in art and design, there is still much that can be further developed to ensure that student learning is maximized.

In particular, students need to know that, whatever the terminology used;

- There are structures in place which are designed to provide on-going support for them in seeking to achieve the outcomes of the project or module.

- Students should be able to articulate the purpose of the feedback and know when and where it happens.
- The timeliness of feedback is seen to be crucial to its successful contribution to student learning and, therefore, forward planning.
- A timetable of events, should be provided for students and staff.

All teachers particularly sessional teachers, should;

- Be inducted into the discipline's approach to formative feedback.
- Focus should be towards the helpfulness of feedback
- Feedback should be designed to enable students to become critically aware and able to articulate their work within a professional context.
- Students welcome advice on how to proceed to meet the project objectives but the advice needs to be constructive and achievable.
- Students also welcome the comments of their peers. Their comments suggested that it is difficult for them to criticise the work of their colleagues in an open crit forum so strategies should be adopted to help students to comment in a critical and structured way that also promotes critical discourse. Online forums are one example of how this has worked.
- Students benefit from on-line support but also welcome individual, face-to-face discussion of their work. Whilst this might take place in smaller groups, the potential for 'the personal touch' should not be underestimated or lost.

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AN INTEGRATED TEACHING STRATEGY: REFLECTING ON A COLLABORATIVE DESIGN PROJECT

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Abstract

An integrated teaching strategy was employed at a first year level in the Department Interior Design to strengthen the connection between first year modules and include participation from a related design discipline in the Faculty of Art, Design and Architecture. The teaching strategy aimed to integrate the knowledge and skills that students gain within separate modules and develop their understanding of the interdependence of content that is taught throughout the programme and across departments. This paper reflects on a collaborative project which addressed and introduced the aim of this teaching strategy. The project was conducted across three first year modules within the Interior Design programme and extended to involve third year participation in the Department of Industrial Design. The collaboration and involvement of the third year Industrial Design students exposed the first years to a related design discipline and introduced a multidisciplinary dimension to the project.

The collaborative project introduced first year students to the design problem solving process and advanced the lateral thinking process for third year students. This was done through exploring and integrating the parts (components) of a project before assembling the three-dimensional space or object. A hermeneutical understanding is therefore introduced which challenges the existing understanding of the student and assisted in stimulating an understanding of lateral thinking solutions. The reflection presented in this paper includes feedback from students which was obtained through the presentation of a project evaluation questionnaire. Findings are presented to explain both the complexities as well as the successes of the project.

Keywords: *integrated teaching strategy, collaborative project*

Introduction

Students entering the first year of study in Interior Design, at the University of Johannesburg, represent a diverse group of individuals that vary greatly in the abilities and skills required to execute Interior Design projects. Since 2008, the Department identified a decline in the percentage of students with prior art and/or design experience (Breytenbach & Johnston 2008). In 2011, the Faculty of Art, Design and Architecture first year experience survey indicates that only 38 percent of the 2011 first year students' cohort has prior art and design experience. In 2010 this average was 45 percent which indicates a drastic decline in the Faculty (Hollander 2011). This decline in prior art and design experience raised concerns around first year readiness and prompted the Department of Interior Design to revisit first year teaching and learning strategies. In addition, a new cohort of students entered the first year in 2009. These students were the first group that had completed the revised secondary school curriculum. The knowledge and skills levels of this "new type of student" were unknown and untested within the tertiary environment and first year lecturers were required to monitor the progress of the students closely. As a result the first year lecturers in the Department of Interior Design monitored their performance and presented feedback annually to the Department. Therefore, in an attempt to address the first year learning needs identified in 2009 and 2010 an integrative design project was introduced in the first semester programme in 2011. This paper commences with a description of the teaching and learning challenges and the teaching focus of the project in an attempt to explain the background and motivation to the focus of a collaborative project introduced at first year level.

Identifying the design teaching challenges

The project described in this paper was introduced to address the teaching and learning challenges identified within the Department of Interior Design, whilst placing particular focus on the first year, first

semester experience. Four teaching and learning challenges were identified which required consideration in the Department's teaching and learning strategy. The first three challenges were identified through observation and interaction with students during studio sessions over the past three years. The fourth challenge was presented in 2010, as a multidisciplinary Faculty strategic initiative.

The first teaching challenge was observed by studio lecturers in the Department. Lecturers noted that a large part of the students' visual frame of reference is determined by their everyday interaction and dependence on digital communication devices such as the internet, television and cell phones. These devices are instantly accessed when problem solving is required. Populist images, communicated through digital media, are not interrogated in the design process and distract the student's focus and response to design briefs. This creates a significant challenge when teaching design, since digital skills and references as well as populist preconceptions need to be integrated, in a positive manner, in the design teaching and thinking process.

The second challenge was identified through comparing the output delivered by students before 2009 to the output delivered in 2009 and 2010. As previously stated, a rapid decline in a prior art or/and design experience was noted. It was identified that the vast majority of students require a step-by-step learning experience through which they can obtain basic skills in drawing (both perceptual and conceptual), painting (understanding and use of colour), model making (constructing three dimensional models from flat shapes).

The third challenge was evident through both discussions with students and the output delivered in the various modules. It was evident that Interior Design students' approach the modules in the programme as unconnected entities and as a result they are unsuccessful in integrating knowledge and skills obtained in various first year modules in design projects. The task-orientated approach of students was labelled as a "pigeon-hole approach". This response requires that lectures over emphasise the relationship between modules from first to third year and regularly introduce projects that demonstrate the relevance and relationships between knowledge and skills obtained within in a particular year and between different years within the programme.

The fourth challenge that required attention was to address the limited understanding that students have of related design disciplines. The Faculty of Art, Design and Architecture consists of eight departments namely; Architecture, Fashion, Graphic, Jewellery and Manufacture, Industrial, Interior, Multimedia Design and Visual Art. In 2010, departments were encouraged to further increase multidisciplinary design projects to introduce students to team work and problem solving in order to enhance their experience and provide exposure to the broader spectrum of design disciplines. The project, described in this paper, was therefore constructed with the intention to integrate the first year learning experience as well as involve student participation with the Department of Industrial Design.

Consulting literature whilst developing the teaching strategy

The first stage of teaching problem solving

An investigation into teaching and learning strategies identified the book written by Killen (2010) *Teaching Strategies for Quality Teaching and Learning.* This book is written from an educator's perspective and aims to address teaching strategies across a broad range of learning areas and disciplines. He identifies various ways in which problem solving can be used as part of a teaching strategy. Killen (2010) identifies three categories; teaching *for* problem solving, teaching *about* problem solving and teaching *through* problem solving. In the first category, teaching for problem solving, Killen (2010) explains that students need to acquire basic knowledge, understanding and problem solving skills before they can solve problems through applying skills learned in a familiar context. The students are provided with a foundation which will enable them to solve problems at later stages of learning. The three categories presented by Killen (2010) identifies an important first stage to problem solving which is relevant and appropriate to a first semester, first year teaching strategy. It was therefore considered important to pay particular attention to the basic skills that are incorporated in the project and to ensure that these skills are mastered by all the students.

An integrated and interactive teaching strategy

Literature revealed that Interior Design academics at the Queensland University of Technology in Australia were also faced with the challenges of addressing an appropriate teaching strategy for the

interior design environment. Smith, Hedley and Molloy (2009) developed a reflective model for the teaching of Interior Design in an attempt to deliver core content more effectively and address the challenges and demands of a changing university context. They proposed that traditional teaching strategies should be replaced by an integrated and interactive approach. The theoretical frameworks of hermeneutics and Peirce's logic of enquiry were employed in the development of their reflective model's learning strategy (Smith *et al* 2009). This learning strategy shares an important component with the project described in this paper. The value and importance of a hermeneutical understanding is emphasised, which is achieved through exploring and interrogating parts in relation to the whole and similarly, the whole through insight into the parts. Smith et al (2009:14) explain that a hermeneutical understanding is an approach that aims to reveal conditions that facilitate understanding, whilst it takes into consideration both the learners and their context(s).

Through adopting this integrated approach as presented by Smith, Hedley and Molloy (2009), a holistic outcome between various modules could be achieved, which is considered to be essential to the success of the project. An integrated teaching strategy could furthermore demonstrate to students how the knowledge and skills acquired in the different modules could be merged to form a holistic design problem solving approach. The different tasks, completed in each module, are then deliberately integrated to remove students from developing a compartmentalised viewpoint of their different modules. Students should be encouraged to keep up with the progress of the project since late submission and poorly executed tasks impacted on their overall progress.

Introduce the element of surprise within the teaching strategy

Ludden, Schifferstein and Hekkert (2008) conducted research into the use of surprise as a design strategy in product design. They paid particular attention to the manner in which surprise is used by product designers to create original and interesting products which could evoke a pleasant, unexpected and new experience for users. Ludden *et al* (2008:28) suggest that "[t]he product user benefits from the surprise because it makes the product more interesting to interact with". These authors identified two different surprise types; namely products with Visual Novelty and products with Hidden Novelty. The Visual Novelty surprise type relates to an experience that is originally unfamiliar to the perceiver where it is not possible to make a connection based on previous experience. The Hidden Novelty type refers to an experience that seems familiar to the perceiver and as a result the perceiver has certain expectations. Through introducing a surprise element the original expectation is proven wrong and the perceiver's original expectation is altered (Ludden *et al* 2008).

Although the research conducted by Ludden *et al* (2008) relate to the experience and expectation of users that engage with new products, an important connection was identified between this design strategy and first year design teaching strategy. From a teaching and learning perspective, it is equally important to maintain the interest and focus of students, especially if a longer extended project is introduced, over various stages in the first semester of first year. It should also be noted that in the first semester the students are at varied levels of programme readiness. Students with prior art or design experience have already mastered basic art or design skills. It is equally important to maintain interest and focus for all types of learners. The second surprise type, Hidden Novelty, addresses the design expectation of both the elementary and advanced learners. The first three tasks of the project addressed familiar activities such as drawing, constructing pattern and painting. The final task of the project was not known at the outset and each task had specific outcomes that informed the next task in a surprising way. The project was revealed step by step which prevented students from pre-empting the final stage or outcome of the project. This approach further addressed the first teaching challenge described in this paper. It was not possible for students to source and incorporate unrelated images and references into the project but rather focus specifically on the task at hand.

The theme and focus of the collaborative project

Theme of the project

The theme of the collaborative project was to explore and apply the visual elements; line, tone, form and shape at a first year level in three modules namely; Design, Graphic Interpretation and Form and Colour. By sharing one project between these three first year modules, an opportunity was created for the students to understand and integrate the project's sub-components that were produced in the different modules.

Exploring and interrogating the components before assembling the whole

The entire first year project was designed to take place over one term, which is a period of eight weeks and varied between 6-9 hours contact session per week. Focus and attention was given to each task or component and aimed to prepare students for the problem solving processes that followed at a later stage. Therefore, before teaching could take place through problem solving in the second term, the students needed to develop an understanding of the design elements, composition, form, scale texture, rhythm etc. The basic knowledge in skills were incorporated in the step by step approach that was introduced into this project, which then finally contributed to assembling a three dimensional space. Focus was placed on the heuristic circle (as described by Smith *et al* 2009) in which attention is given to the parts which are used to construct a space. It was essential for students to reflect on the project after completion to ensure that the whole (completed project) was understood in relation to the parts (project tasks).

Brief description of the collaborative project

The project comprised a variety of different tasks that were executed within the different modules. The third year Industrial Design students observed the first year design development process to enable them to source surface elements from the first year designs that were to be introduced into their third year design project.

Task 1: Execute a line drawing of an interior

The first task was performed in the first year module Design 1. Students were instructed to make a drawing, on an A3 format, using the density of lines to create the optical effect of tone. To enable a precise effect students used a black fine liner for this drawing. In addition, students were requested to study examples of engravings and etchings executed by Durer, Rembrandt and Goya and observe the manner in which line is used to create a dramatic optical effect of tone and atmosphere.

The stimulus was a photograph, identified by the each student, of an interior that was selected from local interior design magazines. Students were carefully guided in the selection of a suitable interior photograph. They were asked to identify interior images with a variety of tones, from dark to light, and with interesting detail. The students were encouraged to analyze the photograph and when starting the drawing, to build lines to create areas of tone (see figure 1). At the end of this task the student critiqued and assessed their success in achieving the outcomes.

Task two: Generate a repetitive geometric pattern

The second task formed part of the module, Graphic Interpretation 1. An introductory exercise to this module required of students to generate a balanced, repeat pattern. Using basic geometric shapes, students were instructed to combine these in unusual configurations in order to produce ‘new’ and unexpected patterns. The task introduced the students to the positive and negative shapes as a precursor to constructing letterforms and spaces around and between letters and perceiving words as visual units. Students explored working with shape in black and white and in so doing, came to see how visual relationships, rhythm and repetition of appropriately scaled motifs to a designated format, can produce visually exciting patterns. Whilst the results constituted discernable patterns, the intention was for students to reduce and incorporate these patterns at a later stage of the project in their final designs (see figure 2). At this point however, students were unaware of the final application of the pattern generated in this exercise.

The outcome of this task was taken further in the module, Form and Colour 1. Logistically the continuation of the task was made possible because the same lecturer presented both these modules. The students explored the relationship between form, colour and pattern in an exercise. Basic geometric shapes were painted in warmer and cooler colours and positioned as either a cityscape, playground or sculpture in which the shapes advanced or receded to create depth within the design. Both the above exercises formed part of a carefully designed, scaffolded skill-based learning experience. In each module the purpose and the function of the skills were made explicit and processed individually with students and critiqued in feedback sessions.

Figure 1: Line drawing of interior space

Figure 2: Geometric pattern used as floor pattern

Task 3: Construct a three-dimensional cubic space

The first two tasks were incorporated in the final stage of the project. Up to this point the students had no prior knowledge as to how the previous tasks, the line drawing and geometric repeat pattern, would be incorporated in the final task. This teaching approach aimed to show students how to explore and search for an alternative creative solution. The planar to volumetric approach aimed to embed the understanding that a form can enclose space, thus creating an interior space. Furthermore, the students were introduced to the elements of surprise, in that unexpected results were created through the manipulation of scale and introduction of the sub-components of the previous tasks.

The students were required to make photocopies of their line drawings and repeat patterns. Sections of the photocopies were enlarged or reduced in scale. The selected reduced or enlarged copies could now be used as floor of wall covering in the cubic space. The results were unexpected and exiting. In addition, cubes, cylinders and rectangular boxes as well as flat screens were constructed to define and articulate the cubic interior space. These elements were painted in warm or cool tones of grey, to provide visual resting points against the dynamic black and white surfaces. Silhouettes of chairs, insects and motorcars were cut out from coloured paper and added to the rendered wall surfaces to introduce focal points and/or elements of contrast and interest in the design. The introduction of the silhouettes further enhanced the unexpected qualities of the interior (see figure 3).

This task made the students aware of the effect that visually active or patterned surfaces have on the scale and space of the interior. They were encouraged to photograph their modules with a cell phone or camera. The photograph was taken at eye level, cutting out any background, focusing on the space as it would be perceived by somebody entering and walking through the space. Once again the students were pleasantly surprised when they viewed the photographs. A project that started out as a line drawing and repeat pattern was morphed, collaged and shaped in a visually exciting three dimensional space. During the reflection and critique session the linking of the parts to form a whole was reinforced as an important design process that requires focus and attention throughout all design stages.

Collaboration with Department of Industrial Design

The Department of Industrial Design presented their third year students with a project to design and manufacture a slip cast ceramic water jug. Each student was required to produce a series of jugs with the same form but with different surface treatments on each jug. It was decided that the line drawings

and patterns produced by the first year students, would be used as surface embellishments for the water jugs. The idea was to source a surface embellishment that was original and effective.
The third year students observed the development of the first year project and participated through presenting critical feedback to first year students. After the observation stage the third years commenced with the design of the ceramic water jug. The involvement of the third years throughout the first year project made it easier for them to transform the first year drawing and patterns with the resultant enlargement and reduction of scale into surface transfers. Interior design lecturers were invited to participate in the critique of the designs for the jugs and also played a part in guiding students with their decisions on the selection and placement of the transfers.

The completed jugs had in common with the first year models the quality of unexpectedness and variety. The more obvious solutions that would have possibly arrived at were avoided as a result of their participation in the project. The student gained creative inspiration by considering the truly original nature of the material that they worked with (see figure 4).

Figure 3: Interior of the model

Figure 4: Selection of completed water jugs

Students' reflections on the project

Students were given the opportunity to reflect on the project by completing a questionnaire. In the first year, 45 Interior Design students (90 percent of class) took part in the reflection and 18 Industrial Design students (90 percent of class).The questionnaire presented the following three questions to the students;
Question 1: What did you learn from the project?
Question 2: Where you satisfied with the outcome of the project? Motivate your answer.
Question 3: Which aspects (stage) of the project did you enjoy most?

Learning obtained through this project

In the questionnaire a number of first year students identified that they mastered various basic skills such as drawing, painting, combining colours and building models. Two first year students communicated this as follows;

> "I learned how to use my different tools, like cutting knives and paint to create the model (Interior student 40)

> "I learned new methods of drawing from this project that I never thought I'll be able to accomplish (Interior student 26)

The majority of first year students emphasised that they had learned to work neatly and accurately in executing all their tasks. In addition to the basic skills that were acquired, students also identified that they had learned to be creative and professional. In contrast to the first years, the third year Industrial Design students focused on the values of collaboration and interaction in their feedback. This was identified by one student as follows;

> "Collaboration with another department gives one a different perspective on how to approach a project" (Industrial student 7).

The element of surprise was identified by both Interior Design and Industrial Design students as follows;

> I surprised myself because I didn't expect it to come out the way it did (Interior student 40).
>
> Learned that different and unexpected features can be added together to create and interior which is visually stimulating and interesting (Interior student 41).
>
> I found that the interaction with the interior design department very valuable because of the unexpected results that emerged (Industrial student 18).
>
> It [the ceramic water jug] was surprising as it looked better than I had imagined it to be (Industrial student 3).

Student satisfaction with the outcome of the project

The majority of the Interior Design students (n=23) were satisfied with the outcome of the project while eight were partially satisfied. Fourteen Interior Design students indicated that they were not satisfied with the outcome of their project. The motivation provided for their dissatisfaction displayed a level of personal dissatisfaction or disappointment with the outcome of their project. The comments show that these students were not personally satisfied with the neatness of their models and the time and effort invested in the project which impacted on the final product. Only one student in the class did not understand why the project was unsuccessful when compared to the rest of the class.

The vast majority of the Industrial Design students (n=15) were satisfied with the outcome of the project. Only two students were partially satisfied and one was very dissatisfied. All three these students indicated that they were satisfied with their projects but not pleased with the poor marks they received. The overall results indicate that the majority of the students were satisfied with the outcome of the final design.

Project stage enjoyed most

The feedback presented in the first year questionnaires identified that the majority of students enjoyed the final stage of the project most (table 1). The popularity of assembling the final model was followed by building the model and transforming the line drawing. The majority of students indicated that they had constructed a model for the first time and although the activity presented various challenges to the students, it was evident that they enjoyed the physical construction of the model. Equally enjoyable was the transformation of the line drawing into wallpaper for the cubic space.

Project stage	Observation percentage
Integrating all the components, putting model together, making a whole idea	37%
Build a model	15%
Transforming the line drawing	15%
Seeing the end result	8%
Execute the line drawing	7%
Planning the space	4%
Making the pattern	4%
Enjoyed all stages	4%
Interact with other students and get input on work	2%
Being creative and artistic	2%
Designing the parts of the projects	2%

Table 1: Stages enjoyed most during the project (Interior Design students)

The feedback presented by the Industrial Design students indicated that two different stages were enjoyed equally by students in the group. The moulding and slip casting of the project as well as the application of the surface embellishment was identified as the top two stages by students. It was also of interest to note that the third years derived value from the interaction and discussion with both students and the lecturers in the Department of Interior Design. Two students suggested that more feedback and closer interaction should have taken place with first year students to improve the design of the final product.

Project stage	Observation percentage
Slip casting the jug, making the jug	30%
Application of the graphic/surface finishes	30%
Interaction and discussion with other students and lecturers	25%
Seeing the end result	5%
Design the form of the jug	5%
Getting free reign to work with the first year line drawings	5%

Table 2: Stages enjoyed most during the project (Industrial Design students)

Conclusion

In reflecting on the student feedback and output delivered in the project it is concluded that the integrated teaching strategy was successfully implemented in the first term of the first year. The knowledge and skills introduced through the sub-components of the design project, offered students a foundation from which they could further develop their knowledge and skill base and problems solving abilities. To ensure that the positive output delivered through the project continues into further first year projects, the lecturers ensured that knowledge and skill were reinforced and thereafter further developed in following projects.

The assessments of the final project indicated that all the first year students obtained a pass mark (above 50 percent). The comments presented in the students' reflection show that students understood their shortcomings and were able to present recommendations of how they could improve their marks. The overall performance of the students assisted in building confidence especially for students without prior art or design training. The first year student reflection further indicated that a large number lacked basic skills, such as cutting cardboard, building a scale model and working with paint. Although the first project assisted in developing these basic skills it furthermore indicated to students how to continue the investigation and exploration process once the module tasks were completed.

An integrated, hermeneutically located project, such as described in this paper, provides students' with a broader more elastic scope and application for their rapidly acquired skills. The step by step approach emphasised the importance of the various stages inherent in the project and indicated that focused time and effort is required throughout a project to ensure satisfactory completion. The majority of first year students that were dissatisfied with the outcome of their projects indicated that they had not invested enough time and effort in the project. Furthermore, by placing emphasis on the components (parts) of the project the lecturers could monitor and assess the progress of each student closely and focus on their individual needs.

Building surprise elements into this project has sharpened the student's anticipation of new learning outcomes. On being presented with a new project students are more analytical of the briefs that are presented as a result of their experience. Working with students from different levels in other programmes within the Faculty generates a sense of curiosity about other design fields with their particular approached and strategies to design education. This allows them to make comparisons to their own development and enriches the work that they produce. In conclusion, this project was described by lecturers and students, from both departments, to be not only successful in meeting all the project expectations but also as an enjoyable and enriching design and teaching experience.

Acknowledgements

The authors acknowledge and value the contributions that were made in the realisation and execution of this project by first year lecturers Liza Titlestad and Roy Jones. We are further appreciative of the

keen participation and enthusiasm of lecturers in Industrial Design, Chris Bradnum and Victor dos Santos.

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ARE WE THERE YET?
GRAPHIC DESIGN'S NEXT DESTINATIONS

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Abstract

The diverse tautology applied to "graphic design" means different things depending on the perspective from which it is viewed and has become the topic for much debate in recent times. This is of particular relevance to the tertiary educational arena in South Africa, where universities (including Nelson Mandela Metropolitan University (NMMU) which provides the context for this paper) are faced with the dual spectres of programme re-curriculation and Higher Education Qualifications Framework (HEQF)[1] level compliancy in the near future and graphic design programmes will have to reconsider their relevance in a changing/changed educational and business paradigm. Determining what graphic design is and reflecting on its role in society is a critical aspect of this imminent, and important process.

This paper will attempt to define the 'new model' graphic designer by identifying the qualities, skills, values, content and contexts that best describe the practice and the practitioner; as this should also inform educational best practice, and will present a list of values and characteristics that embody the essence of graphic design for the 21st century. These characteristics can then become the basis for the development or evaluation of a best practice curriculum that is credible, relevant and vital for the future. The author contends that responding to the 'definition' will allow teaching and learning to become more relevant as the designer's identity is clarified, a broader world view is encouraged and curricula evolve to accommodate the present and future realities of graphic design communication.

Key Words: *graphic design; design education; curriculum development*

Introduction

As universities in South Africa (including Nelson Mandela Metropolitan University (NMMU) as context) gear up to evaluate old and prepare new curricula for graphic design programmes (amongst others), being able to clearly define the parameters of the discipline becomes a key aspect of the process. Developing or adapting curricula, such that the teaching and learning remains relevant, requires determining the 21st century designer's 'new identity' and understanding the context in which the discipline must operate. Based on a document study the present and future nature of the practitioner and the practice will be identified. From these findings guidelines for the development of a best practice graphic design curriculum will be proposed.

What is graphic design?

Using image and text to create visual communication is how the public domain perceives graphic design; a simplistic view that does not encompass the multiple activities that express what it is that graphic designers really do. Currently there are debates about this subject as professional practitioners, academics and design theoreticians attempt to clarify what is meant when one refers to graphic design as the product of a creative process. It is easier to identify "what it is that designers do" than to define "what design is", as the following extract will attest to:

> They create printed and electronic communication that includes: books; magazines; newspapers; catalog[ue]s; posters; brochures; annual reports; graphic identities and logos; exhibitions; packaging; environmental graphics and signage; CD covers; movie titling; on-air television graphics; interactive websites; and multimedia programs. Their work is composed of images and typography. Graphic designers who work in film, video, or computer media also use sound and motion as means for communicating messages (AIGA/NASAD nd.).

[1] The HEQF is the guideline, produced by the South African Council for Higher Education, that clarifies level descriptors, credit allocation and articulation possibilities for tertiary education programmes.

Landa (2011:3-8) offers a series of categories that group together the visual communication intention and therein the applications that are allied to the problem-solving approach appropriate to them: advertising; branding; identity design; corporate communication; environmental design; Information design; interactive or experience design; motion graphics; package design; promotional design; publication design and typographic design.

If the two lists cited above are "what" graphic designers do, there is still a need to attempt to describe or define the field of graphic design. Graphic designers through the process of designing, create graphic design as a product. Moreover graphic design does not exist as a result of itself but rather as the outcome of a client/designer brief. Buchanan (1995:48) states that:

> [Design] is the art of inventing and shaping 2-, 3- and 4-D forms that are intended to satisfy needs, wants and desires, thereby effecting changes in the attitudes, beliefs and actions of others.

Fifteen years later this definition has to encompass forms of visual communication that never existed at that time, including the Internet, social networking, mobile technology and its multiplicity of channels of communication, virtual worlds and digital animation, TV on-demand, blogging, ambient media and viral marketing. Encyclopaedia Britannica Online (2008) gives a more pedantic definition:

> [Graphic design is] the art and profession of selecting and arranging visual elements –such as typography, images, symbols, and colours – to convey a message to an audience … Graphic design is therefore a collaborative discipline: writers produce words and photographers and illustrators create images that the designer incorporates into a complete visual communication.

Thus graphic design (or what it has become) operates in one realm that sees the role of the designer as nothing more than the conduit through which a client's message is actualised, as Shaughnessy (2008:27) puts it: "It is widely believed that graphic designers have no authorial voice". Helfand (in Shaughnessy 2008: 29) however presents the case for the role of graphic design as an active agent in the evolution of society and culture because it is,

> …a visual language uniting harmony and balance, colo[u]r and light, scale and tension, form and content. But it is also an idiomatic language, a language of cues and puns and symbols and allusions, of cultural references and perceptual inferences that challenge both the intellect and the eye".

Helfand (2010: ¶1) offers further insight into the role of graphic design as an art that is visible everywhere and pervasive in its ability to bring together disciplines as diverse as art, architecture, philosophy, literature, language, science and more, in a far-reaching and sublime manner. In a similar vein Lunenfeld (2003:14) suggests that the 1980s and 1990s saw the "dissolving of the boundaries between art and design, and architecture and sculpture" a phenomenon that surely impinged on the way in which, design in general, and graphic design in particular are perceived in the early 21st century. Although Lunenfeld (2003:14) makes an important observation regarding the power of humanist design to draw communities, cultures and democracies closer together, he comments also on a higher order principle to which graphic design ascribes: "[Graphic] Design is not about serving the needs of business, but also about determining and working towards the greater good for society, government, education and the environment". Helfand (2010:4-5) supports this contemporary contextualisation by asserting that,

> Graphic design achieves its ends through complex combinations of words and pictures, numbers and charts, photographs and illustrations that, in order to succeed, demands the clear thinking of a particularly thoughtful individual who can orchestrate these elements so they all add up to something distinctive, or useful, or playful, or surprising, or subversive or somehow memorable.
>
> Graphic design is a popular art and a practical art, an applied art and an ancient art. Simply put, it is the art of visualizing ideas.

In the 21st century graphic design and visual communication have become more difficult to define according to well-established and clear parameters. The rapid conversion of the practice to computer technologies and mobile communications has irrevocably altered how the business of design is conducted, how the products of design are communicated and distributed, and how audiences receive, decode and respond to it. In virtually all spheres of its influence, graphic design has evolved into something other than logos, print and advertising, and is now an activity that involves broader interdisciplinary engagement, a keener knowledge and understanding of social and cultural mores and a global playing field.

> ...we have seen the most successful practitioners progress from being 'makers of things', trained within the dimensions of finite outcomes, toward becoming conceivers of strategies, communicating complex messages clearly and considering the ways in which those messages are received by audiences over time. The designer of today is collaborative and multidisciplinary, and must become even more so in the years ahead (Grefé 2007: 4).

The de-corporatisation of design communication has resulted in more emphasis being placed on values connected to humanness, cultural sensitivity, empathy, intuition, observation and experience that result in new perspectives being presented in the solving of communication problems (Grefé 2007:7-9). The overall result of this enlightened engagement should be solutions that resolve questions with a positive outcome. These solutions emerge from a real and dawning awareness that design has become multidisciplinary of nature and has to operate in an interdisciplinary paradigm. Davis underscores this notion by pointing out that other fields have begun to claim the expertise traditionally allocated to design – computer science has "information design", mechanical engineering has "machine design", even hair and nails are "designed" (previously 'styling' would have better explained these fields, but with influence has come respectability, and thus "design" elevates their status) – and that it is critical that interdisciplinary teams bring the necessary gravitas to the meaning-making and visualisation process (Davis in Heller 2007:16).

Not only Davis and Grefé remark on the critical importance of the interdisciplinary engagement ideal, Irwin (2004) questions the efficacy of specialisation in visual arts education, as it renders students unable to see 'big picture' issues. "[The] ability to see 'wholes' and think in terms of interconnections and the relationships between things is characteristic of a broad and interdisciplinary education, not a speciali[s]ed one. She further points out that universal skills such as drawing, colour theory and critical thinking that build big-picture thinking should not be side-lined in favour of technology, as 'the way the world works' has more enduring value. Many leading universities have aligned their learning programmes to this ethos of interdisciplinarity and the human-centredness that results from it. The School of the Art Institute of Chicago (SAIC 2010), Rhode Island School of Design (RISD 2010) and Stellenbosch University (Stellenbosch University 2011) ascribe to this way, and others, like the Hong Kong Polytechnic University, are initiating revised programmes that include interdisciplinary studies or "broadening subjects" in their mix (Hong Kong Polytechnic University 2011). In their desire to produce "responsible global citizens" they highlight the role of an "enhanced general education programme" designed to broaden students' views and present them with multidisciplinary perspectives through a wider range of subjects (Hong Kong Polytechnic University 2011a).

The American Institute of Graphic Artists (AIGA), as the American visual communication industry's largest professional organisation, perceived these changing circumstances in 2007 and set out to establish what significant future factors would shape graphic design and visual communications by 2015. Recognised academic and industry leaders conferred around this question. Paramount in their deliberations was to determine the trends that were occurring in the marketplace and the competencies that would be required of designers by 2015. Moreover the public needed to understand that designers are not only people who create appealing things but rather they are people who solve complex problems with innovative solutions (Grefé 2007:13). These findings have far reaching implications and impinge significantly on how curricula are formulated for the future. The findings were reported by Richard Grefé in a series of articles through AIGA and www.designtaxi.com and are documented below.

What are the present and future design trends?

Six major trends (AIGA 2008)[2] were identified that will pose challenges for the design profession. Importantly, as stated above, there is a very real shift from the role of designers as the makers of artefacts to that of providing solutions that are often intangible – experiences, services and strategies.

[2] All of these trends emerge from the same resource, entitled Designer of 2015 Trends and are paraphrased for clarity. The document from which they are sourced is available as full-text from the AIGA website at http://www.aiga.org/content.cfm/designer-of-2015-trends. The same author acknowledgement thus applies to the entire section.

a) Need for width and depth of knowledge and experience

Designers must be able to draw on knowledge and experience from a broad range of disciplines informed by the social sciences and humanities so that they understand the content that they are required to communicate. The term used here is meta-disciplinary study as it refers to the 'invisible' knowledge required of designers in their quest to communicate clearly. The implication is that they need to be able to approach their specific discipline with depth, whilst having a broad perspective on how other disciplines impact on the outcome that they produce. Thus interdisciplinary engagement and collaborative processes are the new order.

b) Engaging with systems not components

Designers are required to cope with increasingly complicated problems that are influenced by sociological, technological and economic systems and the effect that they have on people. They therefore have to be able to deal with the complexity of these systems before they focus down to the designing of individual components of a solution, as in the traditional paradigm. This becomes more of a managing role that attempts to bridge the differences in cognitive, physical, and cultural behaviours and experiences within a diverse audience as they attempt to deliver a communication product.

c) Shift from broad to narrow targeting

Narrowly defined audiences with different cultural identities have superseded the old perception of a global, mass audience. Designers therefore are required to consider differences and similarities in their audiences as they shift to targeting narrower groups; made possible by media technologies that allow for narrowcasting and mass customisation. A significant aspect of this trend is the growing importance of ethnographic research that leads towards greater cultural sensitivity and empathy.

d) Breaking through into the attention economy

They acknowledge that the resource that is most valuable in the information age is "attention". Innovative ways must be developed to design for this economy that incorporates communication, information, experience and service design, especially considering the short-term focus of business and the rapid turnaround demanded by marketing. What factors that are informing business to see value in this approach needs to be debated by the role players.

e) Collaborating with users and clients

As with product designers who, of necessity, work closely with their clients and the users of their work, communication design needs to move into the realm of user-centred design that is co-created with users and clients (as is the norm with service design, where the Sappi Ideas That Matter competition is a fitting example) (Sappi Ideas That Matter 2010). At issue is the acknowledgement of ethnography once again and the primacy of understanding who the people are that designers are designing for and is consistent with the rising interest in all forms of social network systems.

f) Designing for sustainability

Excellence in craft goes hand-in-hand with the realisation that sustainability is fundamental to human-centredness and the managing of limited resources. Thus the emphasis shifts to simple, effective design that is sensitive to the human condition, faces the challenge of using appropriate technology, with limited resources, to ethically solve design problems in a sustainable way.

Design trends in action: Implicit evidence

Many of the 'trends' identified above by the AIGA group in 2008 are already commonplace in teaching and learning in 2011, even as they are not formally curriculated into programmes. Considering NMMU for example, the author presents the following observations regarding the Graphic Design programme.

From (a) it is possible to identify, at an educational level, the recognition of the importance of interdisciplinarity and the need for liberal arts content in curricula so that meta-knowledge may develop. Although the existing formal curriculum does not make provision for this meta-knowledge, it is addressed and highlighted as vital to learning, personal growth and subsequent professional growth.

Student projects are nowadays, seldom perceived as isolated elements or components that are

unrelated, but consider the broader ramifications of their context and draw on diverse influences and inputs for their actualisation – as in the systems approach identified in (b).

Certainly young students, already *au fait* with social networking systems and peer-to-peer technologies, without knowing it are practicing narrow-casting and are co-creating communication, and are using those vehicles to present viewpoints, forge allegiances, align to brands and share intimate and personal information in forums where "they" determine the scope of their audience. This is tantamount to precisely the points raised in (c) and (e) and is driven by the "attention economy" posited in (d).

Lastly, it is not possible to avoid addressing human-centredness and sustainability in tertiary education – young people are bombarded with issues around these topics through every conceivable media. They regularly apply their developing social conscience to their formal learning experience and the self-knowledge and empathy that they bring to solving problems – see (f). The upshot of these observations is that the trends forecast for 2015 are already playing out in the educational environment albeit in an unstructured and often informal manner. Formalising them into a structured curriculum should provide the form needed to apply them to a relevant learning programme. If these trends represent the "big picture", what then are the competencies that such a person should embody?

Identifying designer competencies

The following extract from AIGA's Designer of 2015 competencies (AIGA 2008a) presents the requisite competencies expected of a 21st century designer. Acknowledged is that this would be the skill set needed in a design studio, across the staff body, in order to meet future needs.

These competencies uncover the challenges for educational institutions, in developing curricula, and for studios, in recruiting their teams. The competencies are listed below in order of their ranked importance;

- Ability to create and develop visual response to communication problems, including understanding of hierarchy, typography, aesthetics, composition and construction of meaningful images
- Ability to solve communication problems including identifying the problem, researching, analysis, solution generating, prototyping, user testing and outcome evaluation
- Broad understanding of issues related to the cognitive, social, cultural, technological and economic contexts for design
- Ability to respond to audience contexts recognizing physical, cognitive, cultural and social human factors that shape design decisions
- Understanding of and ability to utilize tools and technology
- Ability to be flexible, nimble and dynamic in practice
- Management and communication skills necessary to function productively in large interdisciplinary teams and "flat" organi[s]ational structures
- Understanding of how systems behave and aspects that contribute to sustainable products, strategies and practices
- Ability to construct verbal arguments for solutions that address diverse users/audiences; life span issues; and business/organi[s]ational operations
- Ability to work in a global environment with understanding of cultural preservation
- Ability to collaborate productively in large interdisciplinary teams
- Understanding of ethics in practice
- Understanding of nested items including cause and effect; ability to develop project evaluation criteria that account for audience and context (AIGA 2008a).

Many of these competencies already exist as desired outcomes in established learning programmes like SAIC, RISD, Stellenbosch and Hong Kong Polytechnic. It is unlikely, if not impossible, for a single person to have a grip on all 13. That the competencies are the preferred set that would be represented in a collaborative working or learning environment is more plausible. Reassuringly, opinion regarding the competencies required of graphic designers seems to be recognised from diverse academic quarters. Musashino Art University (MAU) in Japan has developed a reputation for outstanding design education throughout Asia and Japan. Their philosophy hinges around ideas and thinking, rather than

design ability, and thus builds critical facility and constructs personal value systems through a teaching mode that balances teacher-oriented with student-oriented strategies (Wang 2010: 85). This does not derogate from the obvious importance of producing literate and functional designers, but rather implies an approach that has the resultant artefact as an outcome, not the starting point. This resonates with a number of the competencies identified above. Indeed Landa (2011:xi) puts it very succinctly when she points out that to design requires students to think critically and think creatively so that they can express and represent their creative ideas. In order to achieve this, "[m]uch is taught simultaneously – critical and creative thinking, principles, theory, strategy, conceptual design, design development, technique, visuali[s]ation, composition, social responsibility, and applications" (Landa 2011:xi). She directs her readers to AIGA's Designer of 2015 Competencies and also poses the "what is graphic design?" question, and presents the view that it is visual communication that conveys a message to an audience such that it affects their behaviour (2011:3). Robbins' (in Landa 2011: 3) riposte is that "[g]raphic design is therefore one of the ways in which creativity takes on a visual reality".

Nagasawa (in Wang 2010:88) adds insight regarding the design education at MAU in that they not only build design ability but also general knowledge, creative thinking and "designer-ship" within the skills training. MAU is also,

> ...deeply mindful of the need to arm students with a combination of generalist and specialist skills, and remain[s] faithful to [the] founding spirit of providing art and design education that allows students to function with true freedom as human beings, and to foster a new generation of artists and designers with a well-rounded perspective and erudition (Nagasawa in Wang 2010:88).

Nagasawa (Ibid.) states that they present a balanced combination of liberal arts subjects in their art and design programmes as that is the only way that students are able to develop the value systems and critical faculties that are intrinsic to art and design. AIGA's designer competencies appear to validate what academics themselves, from diverse sources, are already applying in their teaching programmes or are in the process of writing into new curricula, and what industry is adopting or has adopted to remain relevant and competitive. Elam (in Lidwell, Holden & Butler 2010:11) adds weight to this ideal by bemoaning the fact that her education gave her "considerable knowledge in form making and very little knowledge in meaning making". Present day curricula recognise the need for a deeper understanding of the human condition, human perception and a more scholarly approach to learning design, providing support for designers' intuitive engagement with the world. Margolin (2002:96-97) expresses the view that,

> [j]ust as other professionals are finding ways to earn their living in the culture of sustainability, so too will designers have to do the same in order to create new forms of practice. The first step is to recogni[s]e that design has historically been a contingent practice rather than one based on necessity. Designers make choices in response to particular circumstances and situations and ignore other possibilities. Today new choices present themselves, and designers need not be bound by what they have done in the past. In years to come, design for consumer culture may be recogni[s]ed as only one form of practice among many rather than play the dominant role that it does today.

These perspectives must affect curriculum development for this and the future era. Although it is impossible to predict the 'shape' of the world in 20 – 30 years' time, the designers in training today will be at the peaks of their careers by then and their education has to go some way towards anticipating the future scenario and the skill sets that they will need.

Dilnot (in Margolin 2002:97) observes that in the move towards a 'post-product' society the designer's role becomes one of more obvious social management and a way of "ordering the world rather than merely shaping commodities". This is concomitant with the findings of Designer of 2015 Competencies and the changing emphasis to 'softer' skills, and more socially aware and humanistic approaches to design problem-solving. The vocational education approach, still prevalent in many South African tertiary institutions, was never intended to encompass the complexity of contemporary systems and their high degree of interdisciplinary integration. To provide for this need implies that curricula need to be re-developed from scratch, shifting from the production of artefact to conceptual awareness and critical problem-solving. Davis' (2008) comment resounds:

> ... we tend to view curriculum as a collection of content categories: we define courses by the objects made (motion graphics), segments of practice served (web design), or technical processes

> employed ([P]hotoshop), not by students' developing awareness of concepts that transcend these categories, by critical or problem solving frameworks, or by the intended mediation by design.[3]

Davis (2008) is not suggesting that acquiring skills and producing form, product or artefact is no longer important, but rather that the route followed to reach those end points is what needs to be reassessed and that new approaches to teaching and learning have to follow. Koppelkamm (in Schmidt 2009:95) agrees as he sees the ideal designer as a reflective partner, able to work systematically and intuitively and able to understand the strong link between theory and practice. "An academic design institution should not produce well adapted service providers and software operators but autonomous unconventional thinkers" (Koppelkamm in Schmidt 2009:95). For him meaningful design arises out of, what he calls, "radical personal subjectivity" (Ibid.). It is perhaps this "subjectivity" that makes it possible for designers who are schooled in the new ethos built around empathy, interdisciplinarity, sustainability and human-centredness and who intuitively embrace technology, to provide creative solutions for the future.

Grefé (2007a: 2-4) points out that there is a tendency amongst educational institutions and design studios to think in terms of what additional skills or knowledge is required of a 'traditional' designer, when they should be considering a completely new model of designer who will be the standard in the not-too-distant future. Interdisciplinary teams of researchers, specialists and users working as co-designers supersedes the concept of designer as individual author, since this way develops the best solutions for end-users (Joost in Schmidt 2009:95). This acknowledges Grefé's 'new model' designer. Based on the predictions of the Designer of 2015 Competencies, these 'new model' designers entered their university training in 2011, and the imperative to make provision for their and the industry's needs is critical (Grefé 2007a: 2-4). Figure 1 is a visual correlation of the categories of graphic design in a curriculum and the outcomes attributes that need to be fulfilled by the curriculum.

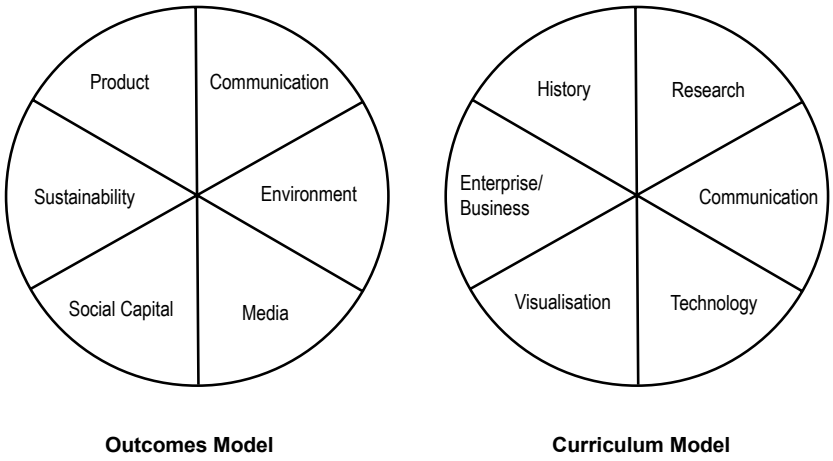

Figure 1: Correlation of design solutions and curriculum categories needed to deliver the solutions (Grefé 2007a: 8).

There is not a direct, linear relationship between the attributes identified in the "Outcomes model" and the categories identified in the "Curriculum model". They should be read as broad representative guides that advise how a curriculum should be built, so as to service the reflected outcomes. The other factor to consider is that the sizes of the pie-chart wedges are not a function of the weight or equivalence of importance of the respective elements. "Sustainability", "Social Capital" and "Environment" are the 'new' entries in outcomes and reference the trends towards human-centredness previously absent in the old model of designer-centred, component-focussed design. The curriculum model introduces two new categories, not formally considered in vocational style programmes, namely

[3] In this address to AIGA Boston in 2008, Davis is referring to the notion of computers as extensions of traditional tools and media. Her criticism is thus levelled at the those who see the teaching and learning that involves computers as developing a certain skill, proficiency, or know-how. The ubiquitous nature of the technology means that it is no longer an add-on to the creative process, rather it has transformed the cognitive perceptions and social practices of those who engage with it and is thus integral to that process. This rationale is in broad agreement with the product outcome approach to most design pedagogy.

"Research" and "Technology". These aspects are often implicit in programmes but need to be given appropriate emphasis and consideration in a formal curriculum structure.

Towards a new definition and a new destination

The discussion in this paper reveals an emergent awareness and changed sensibility that presents the designer of the future as someone who is comfortable in a variety of disciplines (and not just design disciplines). Designers are finding that they are required to solve problems that span a range of knowledge and experience. They must be able to synthesise solutions and use their creativity "beyond traditional boundaries of expertise" (Grefé 2007a). Ekuan (in Margolin 2002:98) adds to this the call for "interdisciplinary and international collaboration in all fields of design" as paramount to sustainability. Two further observations allow for review of the initial question, "What is graphic design?", and grow from the idea that the practitioner and the practice are interlinked. Davis (in Heller 2007: 6) adds that,

> … as educators, we need to consider how we introduce students to reflective practice. How we actually slow down and pace the physical execution of work in order to design smart. How we teach students to find the intellectual challenge within the assignment that will sustain them... How we teach them and their clients to value the research component of a project just as much as they do... form-making on the computer. How we ask them to connect what they're doing in design to things people really care about.

Former South African Minister of Education, Kader Asmal (in Buchanan 2001:194-195) stated in a keynote address to design educators, at the Design Education Forum of Southern Africa Conference 2001, that "as a principle that embraces all countries in the emerging world culture of our planet, design is fundamentally grounded in human dignity and human rights" and pursuant to design engagement, whatever products are made should support this notion. This is a major tenet of the new design thinking that places human-centredness at the forefront of what designers do and should indeed be the first principle expressed in any design endeavour. As Buchanan (2001:194-195) states: "Human-centred design is fundamentally an affirmation of human dignity. It is an on-going search for what can be done to support and strengthen the dignity of human beings as they act out their lives in varied social, economic, political and cultural circumstances".

As further confirmation of the new design/designer ethos, the New Contexts/New Practices Conference, held at North Carolina State University in October 2010, set out to "generate and publish ideas about how design education will address the defining trends of contemporary practice and culture" (AIGA 2010:¶1) in response to the designer of 2015 competencies. This adds credence to the virtually impossible task of an encompassing definition for graphic design, defying categorisation and compartmentalisation. The realm in which design/designers operate is extremely diverse, and indicates a move towards more complexity as the channels through which designers communicate continue to grow. Designers should ascribe to values in their daily engagement with the world that develops their mastery of certain skills, understands the 'big picture', cogently accepts design as a vehicle for change and grows their worldview.

Thus, the pursuit of best practice in graphic design education should embody the essence expressed in the parameters listed below. Distilled from the views, trends, competencies and debates around graphic design discussed in this paper, these ten points serve as the guidelines for developing a best practice curriculum for the 21st century:

- Breadth of knowledge
- Collaboration
- Critical thinking
- Design principles
- Design systems
- Human-centredness
- Interdisciplinarity
- Sustainability
- Technical skills
- Technological integration

So the question, "Are we there yet?" at NMMU seems to suggest that by default, rather than design, aspects of these guidelines are being applied outside of a formally constituted curriculum plan. With the need for HEQF compliancy, the opportunity presents itself to accommodate these parameters

towards a best practice ideal, producing credible, relevant and vital curricula. This author contends that this will lead to teaching and learning enrichment as the designer's identity is clarified, a broader world view is encouraged, and curricula become more human-centred – that is an exciting destination.

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Short Biography

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DESIGNING FROM BEHIND THE CAMERA: CREATIVE INTERDISCIPLINARITY IN FILM, ARCHITECTURE AND INTERIOR DESIGN

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Abstract

Architectural and Interior design are disciplines that are by nature interdisciplinary. Whether in dialogue with engineers, builders, lighting designers or furniture makers, the architect and interior designer is forced to think in more than one register. The same applies in the creative sphere. In their own creative endeavours, architects and interior designers have always drawn on the ideas, concepts, theories and practices of other disciplines. Both the practice and conceptualisation of architecture and interior design then are interdisciplinary.

In this paper the potential role film has as an educational tool in the fields of architecture and interior design will be discussed. We will show examples of set designs that teach us lessons of spatial composition, lighting, decoration and spatial layout. Our focus will be on how film can be used on a more theoretical level to teach students about spatial design theories and approaches.

In this context it will draw upon work done by the author with students of architecture and interior design in both the UK and Spain. In Part 1, it will show how students are able to analyse film and directorial techniques to understand how film directors look at / use space. In Part 2 it will go on to show how that understanding has been used by students in design workshops to discover and explore previously hidden possibilities in spatial layouts and arrangements.

Specifically, it is a paper on the relationship between film and spatial design. However, in a general sense, it is a paper about the potential of interdisciplinary design thinking in an educational context.

Key Words

Part 1: physical space, cinematographic space, architecture
Part 2: storyboards, spatial filming, spatial design

Introduction

Cinema has been a natural testing ground for architects examining alternative approaches to their discipline ever since its inception at the end of the 19th century. Similarly, it has been a natural arena in which film directors have worked on their own particular take on spatial issues. In some cases this has resulted in the development of spatial concepts as complex as those found in the work of many architects. In his 1996 publication, *Film Architecture from Metropolis to Blade Runner*, the German writer and critic Dietrich Neumann identified three general ways in which a dialogue between film and architecture can be developed;

cinema as a reflection and commentary on architecture and the cit;
cinema as a testing ground for innovative architectural visions;
cinema as a field in which different methods of practice can be applied to the realization of architectural projects. (Neumann, 1997: 7)

With regard to the use of cinema as a *commentary on architecture* films such as *Blade Runner*, *Playtime* o *Metropolis* are exemplary; each one becoming points of reference for the architectural debates of their day. (Vilder, 1993: 53) In the context of cinema as *a testing ground for innovative design ideas* it is probably in the genre of science fiction films that one finds the best examples. Working on James Bond films for example, designers such as Ken Adam were able to realise architectural visions that, in the real world of the architectural profession may have been influenced by real architecture, but would have been all but impossible. (Sylvester, 1999: 14) With respect to *different method of architectural practice* Neumann describes stage sets that have a symbolic content, such as the German Expressionist sets of *The Cabinet of Doctor Caligari*, as typical examples. These

involve the use or design of architecture that has more than a physical role to play in the film in question.

Although Neumann centres on the stylistic and physical characteristics of these stage sets he does hint at the fact that *the way they are filmed* is also important to how they fulfil this symbolic function. He thus references the territory that this work intends to operate in by identifying that, beyond the use of film as a representative medium, such films employ the cinematic medium in order to manipulate our reading of architectural space.

Following this principal, the intention here is to examine exactly how the medium of film achieves this manipulation of space on screen and, subsequently, to examine ways in which lessons taken from this manipulation can be reincorporated in actual architectural design. It is an objective achieved by first; drawing a distinction between the physical spaces used as film sets and the presentation of those spaces on film; what will be called "Cinematographic Space". Once this notion is made clear, the paper will progress by showing examples of projects carried out by students of architecture in their attempts to incorporate lessons from cinema into their own creative thinking.

Part 1: Cinematographic Space.

As a starting point in the study of cinematographic space a distinction between two related concepts is proposed; "physical space" and "cinematographic space". (Cairns, 2007: 175) Physical space is defined as the physical environment for film scenes that may be real places or sets constructed in studios. In contrast, "cinematographic space" is definable as the spatial perception of those sets that is created and presented on screen by the director. Potentially malleable through the use of the camera this *cinematic spatial perception* can differ widely from that of the physical location. Thus, what emerges are two terms that represent a distinction between *what is filmed* and *the way it is filmed*; *real space* and its *mediated perception*.

Accepting a certain level of generalization and inevitable grey areas between these two concepts, this distinction has been developed by the author in order to permit greater depth in the analysis of the film director's work. Thus, it is assumed that the cinematographic construction carried out by the director begins from the datum of the physical set. The spatial perception of this set can be constructed using various techniques.

Amongst these techniques is the strategic placing of a light source in order to highlight a particular characteristic of a protagonist or the deliberate positioning of a symbolic prop so that it appears on screen at a given moment. Alternatively, it may involve the arrangement of furniture so that, when filmed from a particular point of view, it produces the desired compositional effect and even controls the movement of the actors whose planned choreography may be intended to ensure that given moments of dialogue coincide with particular movements or gestures. More fundamentally the techniques of cinematographic construction employed by a director involve the movement and positioning of the camera, the use of certain types of lenses, the duration of takes and the style of editing employed in post-production.

Applying this type of analysis to the spatial vision of the director, a three part division of constituent factors emerges; i) the design, selection and specific organization of the illumination and the decoration; defined here as *aesthetic factors*, ii) the compositional disposition of props and the corresponding effects this has on actor movements; referred to as *compositional and choreographic factors*, and iii) the movements of the camera during the filming process and the subsequent interweaving of images in the editing process; definable as the *filming style* (Cairns, 2007: 176).

The differentiation of these three categories is made in order to permit a manageable and useful classification of the different factors involved in the visual treatment of space seen in film. Although they have been identified as independent categories there are inevitable links between each them and they can be employed in any number of possible combinations. Given that different directors tend to employ their own particular configurations of these factors, and thus develop their own styles and spatial concepts, a thorough investigation of cinematographic space would require the study of a wide range of directors and films. However, one director who was more polychromatic than normal, and thus of greater interest as an object of study, was Orson Welles.

With the aim of experimenting with different spatial constructions, often within the same film, Welles was a director who combined and recombined these factors in multifarious and often contradictory ways. This was certainly the case with his masterpiece, *Citizen Kane*, a film that is not characterised by a definable spatial concept but rather a lack of one. The resulting spatial multiplicity of this film makes it an interesting object of study from the point of view of cinematographic space and it is for this reason that three of its iconic scenes are very briefly analysed here.

Scene 1. *Citizen Kane*

Figure 1: Aesthetic filmic and spatial factors

Set in the living room of Xanadu, the protagonist's mansion home. Here the architectural setting is turned into a symbolic representation of the state of animosity and emotional separation between its two characters. (Figure 1). This is done through a number of techniques. Firstly, the setting is enormous. It has very little furniture and has features such as gothic windows more readily associated with cathedrals than the intimacy of the home. Clearly too big and institutional for a couple, it simply heightens the lack of emotional sensitivity in their relationship. Although this sensation is produced by characteristics of the *physical* space it is heightened by certain cinematographic techniques. For example, he uses a wide angle lens that produces the optical effect of an elongated space. This distorts the proportion of the image and makes Kane appear exaggeratedly small in the distance.

Additionally, Welles films from a relatively high position. This compositional device augments the sensation of distance between the protagonists by showing a larger proportion of the floor surface that separates them. Furthermore, he positions the few pieces of furniture to be found at some distance from one another so as to again emphasise that the couple occupy and live in a space clearly bigger than their needs would dictate.

Although more than enough to stress the emotional undertones of the scene, the director goes even further and emphasises the excessive height and size of the space through lighting. He uses spot lights to illuminate each of the protagonists individually and thus leaves the space between them in darkness. This darkness extends to the ceiling which is apparently too high to fit in shot. The final result of this cinematographic construction is a scene full of symbolic resonances.

Scene 2. *Citizen Kane*

Figure 2: Compositional and choreographic relationship

In this scene we see Kane in one of the lowest points of his professional career (Figure 2). Responding to losses caused by the crash of 1929 he is forced to relinquish control of a great part of his media empire. The scene commences with an establishing shot in which we are presented with an image of his friend Bernstein in the foreground. Positioned on the right hand side of the screen he reads a legal document that covers the left part of the image. It is not until he later lowers the document, that the entire scene and space is revealed; Kane's bank manager is seen in the middle ground and subsequently, Kane appears in the background.

Once all the protagonists are introduced the intention of the director is to underline the seriousness and sobriety of the events related. The camera remains fixed and films in one single long take. It thus creates a completely static spatial sensation within which a cautious deliberate dialogue ensues. In order to maintain this sensation throughout the scene there are a number of compositional and choreographic techniques that the director is obliged to use.

The first of these relates to the positioning of each protagonist who must be located so as to appear in shot at all times. Thus, we see Bernstein in the foreground to the right, the bank manager Thatcher in the middle ground to the left and Kane, centrally position, in the background. This spatial arrangement means that a dialogue can ensue between the three without the need for a change of camera position at any point.

Here, the changes of attention that inevitably accompany the dialogue of the three protagonists are made by the spectator whose eye follows the verbal action as it passes between different parts of the space. The ease with which we follow this spatially separated dialogue is augmented through the employment of uniform illumination in each depth plane. This maintains each protagonist clearly visible and distinguishable throughout the scene. Similarly, there is a strict control over the movements of the actors who are restricted to positions or lines of movement that maintain them in shot at all times.

These characteristics clearly allow the director to communicate a sense of gravitas through static filming but they also do something else; they produce compositional characteristics that lend the scene a certain symbolic meaning. Kane is positioned in the background at a great distance from those who determine his fate. Emphasising his impotence in the face of what is happening around him this distancing of the protagonist is exaggerated through the use of a wide angled lens. This makes him look smaller than he is in reality when compared with the powerful figures of the scene, placed in the foreground.

Scene 3. *Citizen Kane*

Figure 3: Filming style and space relationship

The following scene is one of the most sophisticated in the film and produces a spatial sensation that is as complicated as it is subtle (Figure 3). It is set whilst Kane is still a child. Upon coming into money unexpectedly his parents have decide to send him to Chicago where he will be educated under the tutelage of Thatcher, who later appears as the adult protagonist's banker.

It begins with an image of the child Kane playing in the snow in front of the family house. From this initial starting point the camera makes a slow but continuous backward tracking movement that takes it through an open window into the house. Once inside it continues along its route introducing the

scene's three principal protagonists successively; Kane´s mother, Thatcher and finally his father. Without resorting to a cut at any moment it moves along a lineal path that ensures we maintain a clear view of the child through the window at all times.

This route is co-ordinated with the movements of the protagonists who, one by one, begin to walk forwards following the route marked out by the camera's trajectory. The movements of the three actors, and those of the camera, are perfectly interlaced and co-ordinated with one another until the camera reaches the end of the house where it stops.

At this point we have a fixed camera filming static action organised in an extended deep space composition. In the background we still see the unworried child Kane, whilst in the middle ground we have the weak father. In the foreground are the scene's two dominant characters; the mother and Thatcher. This compositional division is reinforced by the use of architectural elements that separate the shot's different depth planes. For instance, the background is demarcated by a wall through whose window we see the child in the distance whilst the middle ground is defined by the introduction of a partition wall visible on the right hand side of the image.

More than simply operating as a compositional device however, this spatial arrangement has certain symbolic and narrative functions as well. The partition wall seen on the right hand side of the image indicates a limit that the father does not pass in spite of his disagreement with the events in the foreground; the signing of the relevant documentation to send the child to Chicago. Upon limiting himself to a secondary position, his secondary and resigned role is clearly evidenced and even emphasised. Similarly, the positioning of the child in the background underlines his complete innocence and separation from the decisions that concern him.

Stemming from the decision to film in one long take with a moving camera, it was necessary to devise a lineal path along which all the action would take place. This enables the gradual and sequential revelation of the protagonists and the different architectural elements of the interior which, once introduced, remain visible for the duration of the scene. This technique minimises the sense of visual change by clearly making all modifications to the on-screen image both gradual and sequential. It is a sophisticated style of filming in which filming, architectural set and actor movement all combine seamlessly.

Part 2: Architectural Design.

What each of these scenes illustrates is a distinct and individual approach to the creation *cinematographic space*. They each result from a different combination of aesthetic, choreographic, compositional and filmic factors. In principal, aesthetic, compositional and choreographic factors are similar to issues handled in standard architectural design. For example, the employment of a particular type of architectural decoration or lighting effect in a set design is no different to its use in a building. Similarly, a director's arrangement of physical elements as either framing devices or compositional features that control our movement in space is similar, if not identical, to that of an architect. Consequently, it easy to imagine how such cinematographic effects and ideas can be transferred into an architectural project.

In contrast however, it is much more complicated to envisage how questions like the duration of a take, the positioning of a camera or the style of editing employed in post production could influence a conventional spatial design project. However, if considered within the framework of the analogy between the camera and the eye, a potential methodology for their architectural use emerges. Interpreted in this way, the duration of a shot corresponds to the duration of a gaze and the sequences, distances and angles of cinematographic shots can be related to the sequence of views through which we appreciate our physical environment. (Cairns, 2007: 198)

Taken to its logical conclusion, this analogy leads us to consider the perception of a film viewer as identical to that of a building user. Although useful, the analogy is not without its shortcomings. The most obvious of these is the fact that the perception of the film viewer is strictly and tightly controlled by the director, whilst that of the building user can only ever be loosely organised by the designer. Nevertheless, it is a useful analogy that spatial designers have tried to learn from and apply in their own field.

What follows is a brief outline of one example of how this process of application from one field to another can take place. It is a workshop divided into 5 sequential stages, the first of which involves an analysis of the film *Citizen Kane* similar to that laid out above. This facilitates the introduction of cinema's *visual vocabulary* and the idea of *cinematographic space* which are investigated further through the analysis of the work of other directors. These activities eventually lead to architectural design projects that incorporate the concepts investigated. It is designed for undergraduate and post-graduate students of interior design and architecture although it has also been run with students of film and media.

Design workshop. Stage 1

After the initial the introductory breakdown of *Citizen Kane*, Stage One of the workshop involves an analysis of the spatial models employed by a variety of different directors. It focuses on certain celebrated scenes that epitomise their style and involves the use of storyboards, plans and sections as tools of investigation. The aim is to deepen our understanding of spatial cinematographic construction. The example selected here is the mutiny scene from the Sergei Eisenstein classic *The Battleship Potemkin* (Figure 4).

Figure 4: Mutiny scene from the Battleship Potemkin

By using the storyboard to isolate each shot in the scene the students identified that three fixed cameras were used to film single actions from different positions and angles (Figure 5). As a result, perspectives from below, the side and from above are all created. In addition to the graphic fragmentation that this inevitably produces, in some shots the frame of the camera is twisted so as to create diagonal and fragmentary compositions. Consequently, the various trajectories and movements of the protagonists conflict with the orientation of the camera and further heighten the sense of dynamism initiated by the positioning of the cameras.

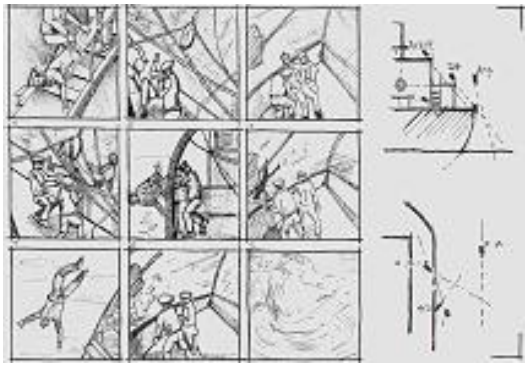


Figure 5: Storyboard spatial and filmic analysis

These initial spatial and compositional decisions represent the first steps in the constructive process of the director. However, it is a construction process that is continued in the post production process where the most important factor in the creation of the work undoubtedly occurs; the editing. Intended to deconstruct the unity of both the space and the action filmed, Eisenstein's editing is definable as a type of collage.

Design workshop. Stage 2

The process of applying the cinematographic lessons taken from these exercises to actual architectural design begins in the second stage of the workshop when, momentarily, the use of storyboards is put to one side. At this stage, the aim of the workshop is to investigate and understand the site used for the later design projects; in this case the Cebada Market in Madrid, Spain (Figures 6 and 7). Rather than employ a photographic camera or sketch book, the tool chosen for this investigation is the film camera. Underlying this decision is a deliberate attempt to identify and highlight the building's hidden cinematographic characteristics. In other words, an attempt is made to identify its filmic potential.

Figure 6 ***The Cebada Market exterior***

Figure 7: ***The Cebada Market interior***

In the type of narrative cinema with which we are most familiar, the entire filming process revolves around certain important actions or events. Examples may include a fight between two actors or a simple conversation between two romantic protagonists. In such cases there are clear parameters that help orientate the director when taking decisions about the method of filming to be used. Typical in this sense would be the use of multiple viewpoints and rapid fragmentary editing to add dynamism and conflict to the fight scene. Similarly, it may be that a more intimate scene, say a conversation between two lovers, is filmed with longer takes, or indeed in one continuous shot. The aim here would be to stress the self-absorbed tension of the moment.

In contrast however, the filming of a site or a building in order to facilitate its architectural or spatial analysis does not have any sort of narrative drive to help determine the cinematic techniques employed. This *spatial filming* then tends to be a purely formal exercise in which attempts are made to counter this absence of narrative by making the film visually interesting. This results in the employment of visual characteristics such as the use tilted frames and multiple view points, or the employment of unusual camera angles to distort the eye's normal perspective (Figures 8 and 9).

Figure 8: Interior staircase View 1

Figure 9: Interior staircase View 2

This formalistic approach to the filming process is further heightened by the employment of the filming styles introduced in the earlier stages of the workshop; fragmentary, static or continuous and fluid for example. What results from all of this is that certain characteristics of the space that would not normally be considered of importance, or even identified, become central to the way students look. What becomes clear is that depending on the method of filming employed, one begins to identify different but equally inherent spatial characteristics. In a sense what is occurring is a form of spatial defamiliarisation; the reinterpretation of the building's spatial characteristics by virtue of its presentation in unfamiliar formats. This inevitably leads to the identification of a different set of spatial qualities; qualities that may even be called, cinematographic. In this sense, film is a medium employed to deliberately facilitate our reinterpretation of space.

Design workshop. Stage 3

The third stage of the workshop returns once again to the use of storyboards. However, instead of being employed for purely cinematic analysis they are now used in a way that more directly facilitates spatial design. This is done by setting the scene examined earlier in the site of the design project. Consequently, what we have here is the mutiny scene from *The Battleship Potemkin* now visualised and storyboarded in the Cebada Market (Figure 10).

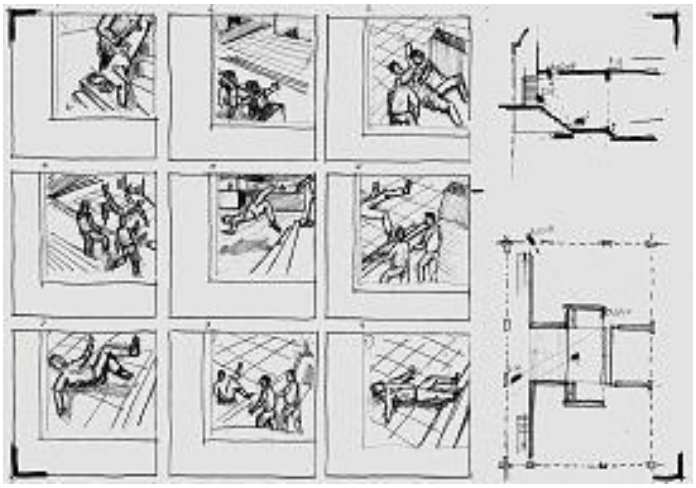


Figure 10: Storyboard with plan and section

In this process the designer is obliged to examine this new architectural setting for particular cinematographic characteristics that would facilitate the recreation of the scene in a storyboard format. Consequently, just as occurred earlier with the employment of the video camera to record the building, the use of storyboards directs the attention of the designer to the site's cinematographic rather than architectural qualities.

In this specific case the entrance zone was identified. Here there are a series of platforms at different levels which are interconnected by a number of individual staircases. This relatively irregular spatial distribution facilitates the selection of multiple camera view points, as well as the possible recreation of the dynamic choreography realised by the actors (Figures 11 and 12).

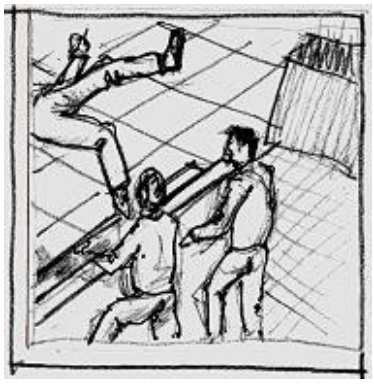


Figure 11: Storyboard close up 1

Figure 12: Storyboard close up 2

These storyboards are done by one group of participants whilst others design different storyboards based on alternative scenes from other films. Together, they result in the identification of quite different spatial and cinematographic characteristics depending upon the nature of the scene in question. What occurs at this point then is a continuation of the process of *defamiliarisation* that obliges the designer to look at an architectural space from a cinematographic perspective. However, it goes beyond the mere visual recording of those cinematographic characteristics on film and begins to consider their application in the context of given physical actions and movements. This move towards considering the visual and physical questions is an important step in the gradual broaching of purely architectural design proposals that follow.

Design workshop. Stage 4

Before these purely architectural questions are introduced however, there is one more storyboard made in the fourth stage of the workshop. On this occasion, the storyboard is not based on a scene from a film, but rather a typical event related to the architectural program selected for the workshop. In the year of the examples used here, the architectural project was the design of a small sports stadium / centre. Consequently, each participant of the workshop was asked to identify one typical action associated with that type of project and to subsequently make a storyboard of that action set in the site.

The example shown here centres of the moment in which two basketball teams leave their respective changing rooms and walk onto the court together. It is based on a continuous style of filming and consequently employs long takes and a moving camera. The students document the proposed movements of the camera in plan and section and thus consider the space from a cinematographic perspective one more time.

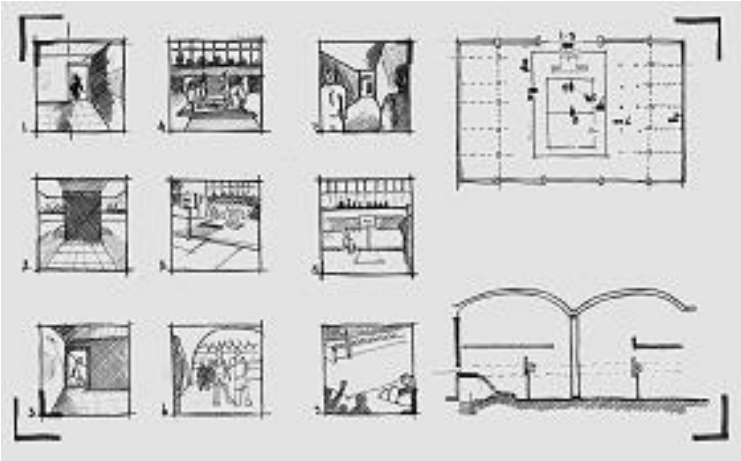


Figure 13: Storyboard of selected "action"

These storyboards are set in the site of the design project and deal with actions typical of the type of project in question (Figure 13)**.** As a result, it is inevitable that some of the ideas contained in them will be directly applicable to the designs proper that follow. For example, we see the use of frontal and back lighting effects that are later introduced by students into their designs proper (Figure 14**).** Similarly, there is a proposal in the storyboard for the use of a path marked out on the floor by a change in floor finish. Intended to emphasise continual movement it was applied easily in the real proposal that followed. Both these examples would fit perfectly in the category of "aesthetic factors" described earlier, given that they are equally applicable in both an architectural space and a cinematographic scene. They are thus, indicative of the close relationship developed between cinematographic exercises and architectural projects in this stage of the workshop.

Figure 14: Proposed backlighting effect

Design workshop. Stage 5

In Stage Five participants pass from storyboards to actual design proposals for the project. As mentioned previously, in the case of these examples the project chosen was a small sports stadium / centre. Essentially, participants work in standard ways at this point and the aim is to find multiple ways of incorporating ideas, concepts and visual effects studied in film into the spatial design proposals put forward.

At its most basic level this may involve the repeated use of a lighting effect or floor finish design as just described. However, more interestingly, it may involve the creation of visual effects that require a certain level of abstraction in their transition from one medium to another. In some cases it may even involve the employment of cinematic spatial concepts as models for architectural spatial planning. In running this workshop the author has identified that most of the design proposals use one or other of these strategies. Consequently, they have been categorised into what is referred to as three strategies for transference; three ways in which cinematic ideas can be incorporated into architectural design. The first of these categories is called the strategy of *direct incorporation* and includes what we have just described.

By way of contrast, the second category identified involves a more creative manipulation of cinematic effects. It is referred to as the *strategy of analogy*. (Cairns, 2007: 217) In the framework of this model one finds architectural effects based on cinematographic techniques such as the long take, the cut and, as in the example seen below, the fade. Simply explained, the fade involves the closing and / or opening of a scene with an image that disappears or emerges from a blackened screen. It is incorporated into the proposals put forward in this workshop through the use of glass walls that are partly transparent and partly opaque (Figure 15).

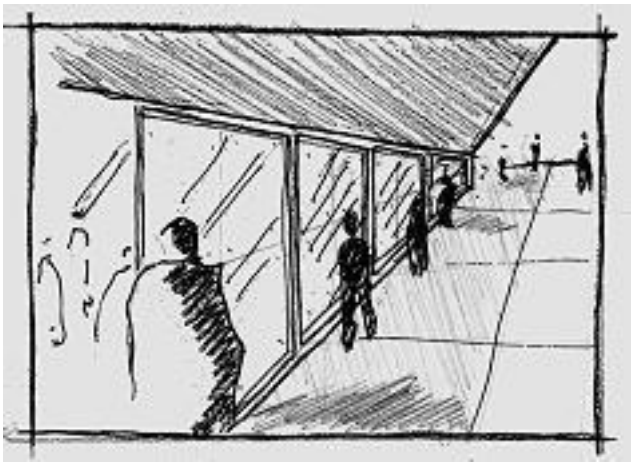


Figure 15: The fade reproduced as an architectural effect

At one end of the wall the proposal is to use opaque glass. However, along its length it gradually lightens until at the near end it becomes completely transparent. Thus, the idea is to gradually reveal the interior as people move along the wall and prepare themselves to enter the stadium. Just as a cinematic scene is gradually revealed by the use of an introductory fade, here the building interior is revealed through a gradual change in transparency. Other design features that follow this *strategy of analogy* include the incorporation of the cinematic cut and the dissolve, both of which produce interesting spatial effects when applied by spatial designers.

At an even more abstract level there are examples in these design proposals of the third category of approaches identified by the author; the conceptual *strategy of transference*. (Cairns 2007: 220) Here the cinematic effects translated into architectural design tend to be spatial concepts rather than visual effects. They consequently require an even greater level of adaptation or abstraction in order to be carried out effectively. Their effect on the architectural project is far more fundamental.

In the example shown here the students have used the filming style of Jean Renoir as inspiration for the design of a lobby space in which various actions take place in different depth planes (Figure 16). The entrance zone of the stadium proposal is thin and long. The linearity of this space is emphasised

by the surface decoration of the walls but also by the lineal disposition of the access ramps placed along its side. These ramps add to the dynamism of the initial view, underline the lineal perspective of the space and optically unify its different depth planes. The cinematic references at play are various.

Figure 16: A deep space composition inspired by Jean Renoir

Jean Renoir was a director that tended to film using long takes. As discussed previously with regard to *Citizen Kane*, this filming style obliges directors to use deep space compositions in which he could organise actions in different depth planes. This clearly happens here with a spectator at one end of the entrance zone seeing people enter in the background of the image.

However, Renoir also tended to control the movements of his actors in very specific ways; coordinating lineal movements from fore to background in great detail for example. This characteristic was central to the decision to position the ground floor entrance doors and the upper level access points to the upper stands at opposite ends of the space. This architectural spatial arrangement is intended to instigate a series of continuous and lineal movement vectors as spectators are obliged to journey along the entire length of this central zone in opposing but parallel directions.

The clear influence of Renoir on the spatial design of this proposal is continued in the design proposal of the stands themselves. Here we see an approach to spatial organisation that radically changes the standard practices of this type of project. In cinematographic terms one of the most notable and fundamental aspects of Renoir's filming was his use of a 360 degree movement style for the camera; instead of limiting the camera to a position on one side of the action, the camera is free to move all around it. (Bordwell 1999: 280) It is an approach that produces a much more fluid and holistic sense of space and action (Figures 17 and 18).

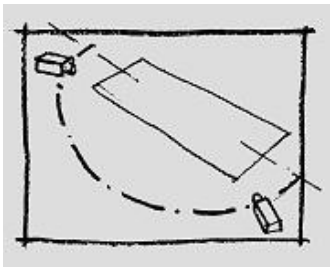


Figure 17: 180° camera movement (right)

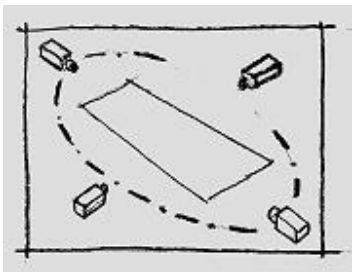
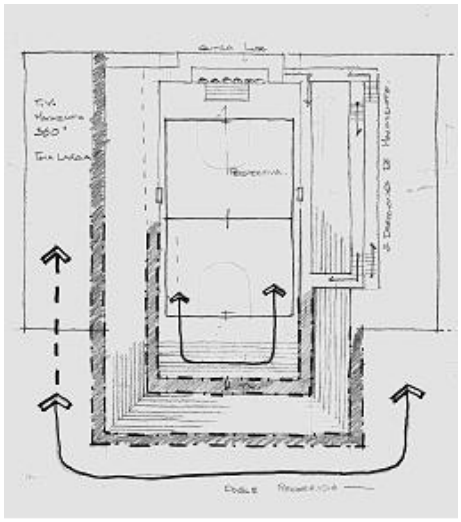


Figure 18: 360° camera movement (left)

Transposed to small scale stadium design this idea involves inverting one of the standard characteristics of this building type; its division of seating into sections that are separated by vertical access routes. This project proposes separating them by horizontal access routes so that spectators are not restricted to one side of the action but can walk around the entire perimeter of the court without spatial interruption (Figures 19 and 20).



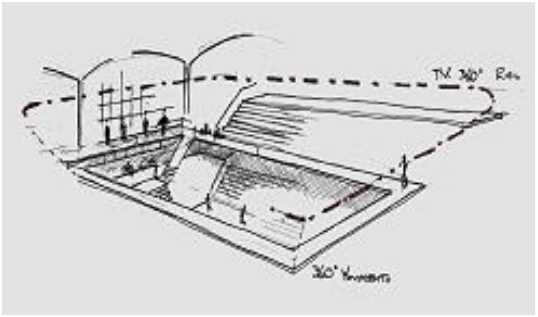


Figure 19: Stands divided horizontally (right) **Figure 20: 360°movement (left)**

Clearly, this design idea reveals an understanding of spatial sequence, duration of view and movement that goes beyond considering films as sources of ideas for illumination or isolated optical tricks. In fact, it could be argued that what ideas such as these actually reveal is the employment of *cinematographic spatial models* as templates for architectural design itself. Cinema is used as a source of spatial concepts.

Conclusion

The design ideas put forward in a workshop like that documented here would require a lot of additional work to resolve their inevitable contradictions and problems. However, they do represent initial ideas on how spatial cinematographic concepts may inform, and possibly enrich, spatial design. In some cases this does not seem to lead to any great transformation of normal architectural thinking. However, in others the potential for far more radical reconsiderations of standard spatial approaches is clearly evident.

Whether of major or minor impact however, one thing that all these ideas have in common is that they stem from the use of cinema as a tool through which to reconsider spatial perception. Taken to an extreme, or perhaps just its inevitable conclusion, such practices could actually lead to a change in the mental frameworks we apply when conceiving space. If such consequences did eventually result from the use of film in design they would represent the most important contribution an external medium can possibly make to the spatial design disciplines including urban design, architecture and interior design.

Acknowledgements

This paper is a continuation of work commenced by the author in a Spanish language book:
The Architect Behind the Camera; a spatial vision of cinema [El arquitecto detrás de la cámara; una visión espacial del cine]. 2007. Abada Editores, Madrid.

The images reproduced here come from a workshop help in La Universidad San Pablo CEU, Madrid. Spain. 2004

The workshop has also been run in the following Institutions:

La Universidad San Pablo CEU, Madrid. Spain. 2004, 2005, 2010, 2011
La Universidad Politécnica de Madrid. Spain. 2005
Writtle School of Design, Essex, UK. 2007
Greenside Design Centre, Johannesburg, South Africa. 2011
Escuela Gestalt de Diseño, Xalapa Veracruz, México, 2011

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Short Biography

Dr Graham Cairns, is the Head of Architecture and Interior Design at Writtle School of Design, Essex (UK). He has taught at various Universities in Spain and the UK and has worked in architectural studios in London and Hong Kong. Prior to working in education he also ran a performing arts group called *Hybrid Artworks* and specialised in video installation and performance writing. He has presented papers at numerous international conferences and has written articles on film, architecture, interior design and advertising for a variety of publications. He has 2 books: *The Architect Behind the Camera; a spatial vision of cinema*, Abada Editores, Madrid, 2007. *Deciphering Art, Architecture and Advertising; selling to the sophisticated Consumer*, Libri, Publishing, London. 2010.

CONSIDERING "DESIGN WITH INTENT" WITHIN GRAPHIC DESIGN AT A UNIVERSITY OF TECHNOLOGY

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Abstract

Although based in various design disciplines the concept of user centred design (UCD) and "design with intent" has been linked to the notion of "human-centred principles", "design for behavioural change", "persuasion technologies" and "interaction design" at international design institutions for some time. Understanding how user behaviour can influence technological solutions is critical for designers wishing to effectively tackle social issues such as eco-solutions, effective wayfinding design as well as the design of information brochures/pamphlets. Designers influence behaviour from a distance through the creative products and services that are produced based on their understanding of user behaviour. According to design consultancy FROG designers acknowledge that instead of aspiring to influence user behaviour from afar there is a need for the products that are designed to have more immediate impact through direct social engagement. Although this aspect of the teaching of design is usually entrenched within a new media, interaction design or usability/service design department the notion is linked so closely to certain existing concepts within graphic design that it makes sense to include aspects of this within a re-evaluated graphic design curriculum.

Key Words: *user-centred design, design with intent, human-centred design, sustainability, graphic design education*

> "The central problem of the designer is not the construction of graphics, products, services, systems or environments, but the creation of means for people to act, to interact, to realize their wishes and satisfy their needs." – Jorge Frascara (1988)

Introduction

This paper is based on exploratory research in progress towards a doctoral proposal. The paper draws on human-centred design discourse as a key theoretical framework to develop a responsive teaching strategy within a creative production pedagogical framework that will orientate graphic design students in the application of human-centred principles to the development of graphic design products.

Increasingly, there exists a demand for social and ethical issues to be addressed within design curricula (Joubert & Economou 2009:98). The current graphic design curriculum at the Vaal University of Technology (VUT), a South African University of Technology (UoT), is firmly encased within the "traditional" view of what constitutes graphic design practice. This view is based primarily on the perception of what is required of a graphic design graduate by the graphic design industry. Presently this curriculum does not engage with the social context of "design with intent" or the human-centred principles and practices increasingly found in the field of new media, interaction design and some service design courses. This paper aims to delineate a problem within graphic design education at a South African University of Technology and provide a brief overview of the existing graphic design curriculum at the VUT.

A further objective of this research is to create awareness in graphic design students of the human being who is ultimately interacting/using/engaging with their creative product. To be able to do this successfully within a socially and culturally diverse context such as South Africa is a challenge. The supporting objective of the research is the development of a set of guidelines for the teaching of graphic design at the VUT. To this end this paper will highlight concerns within the graphic design curriculum at VUT, showcase selected trends in international design education and contextualise the notion of human-centred design principles within a revised graphic design curricular framework.

The proposed methodology for this research will employ a qualitative research design based within the Functionalist theoretical paradigm. The teaching strategy to be developed will include aspects of Scrivener's model of creative production and will consider Schon's theories of professional practice thinking as reflection on emerging practice.

Background

According to Frascara (1997:2), design is a "problem-oriented, interdisciplinary, creative action that needs to consider individual users in order to be most effective". It is generally assumed that design refers to a product which came into being through the combined efforts of a creative individual and a manufacturer. Although design has utilitarian roots, designers are specialists, privy to an exclusive world in which they create and design aesthetically pleasing solutions to a problem usually posed by a client or user. Graphic design students are taught within an educational system grounded in practicum which clearly delineates the "us" (creative designers) and the "them" (the aesthetically challenged user). It is unusual when users are viewed as being in a position to contribute in any way to the design process. Logan acknowledges that "practicum teaching conditions hold the potential for knowledge to remain 'sealed'" (2007:5) and warns that this "inaccessibility" has the potential to translate to the end-user. Rochfort (2002:163) comments on the gap which exists between designers and users by stating; "all too often [communication] design is still viewed as maker-centred and not user-centred". Currently, the only module in the graphic design curriculum at the VUT in which the notion of "us" and "them" is challenged is *Web Design* (students are specifically made aware of the processes utilised by the users of their product through the design of interactive components). As Easterby (1984:28) remarks "the users of a display of any kind –print, or sign, or machines –are engaged in a truly cognitive process… [the designer is responsible for] …those structural cues which generate plans for interactions with or exploitations of the display elements." Therefore in order to create effective design solutions it is essential that graphic design students are taught within a system that embraces the critical role of the user as a participant in the design process.

Several scholars have begun questioning the role of graphic designers in society. Akama (2008:56) states that "designers need to think more critically about what they are doing and the cultural, social and environmental conditions they contribute to." While discussing the role of information design in contemporary culture, Cooley (2000:61) argues that "at no time in human history have so many of our citizens felt alienated from and threatened by the society that we have created." In 2008 at the annual American Institute of Graphic Artists (AIGA) conference in Boston, Meredith Davis, Head of the PhD in Design and Design Studies programme at North Carolina University, spoke about common assumptions about graphic design and subsequently graphic design education. According to Davis, trends that will define graphic design in the future include: "thinking about the people for whom we design as participants in the design process, designing social interaction, and the importance of understanding community" (2008:16). Two decades earlier Frascara wrote a seminal paper on graphic design entitled "Graphic Design: Fine Art or Social Science?" In it he listed the role of graphic design in society as impacting on, and influencing, users and the environment through visual communication in the community (Frascara 1988:21). To demonstrate the importance of the consideration of the user in the design outcome he showcased a visual example which, in his opinion, demonstrated a lack of professional responsibility (see Figure 1).

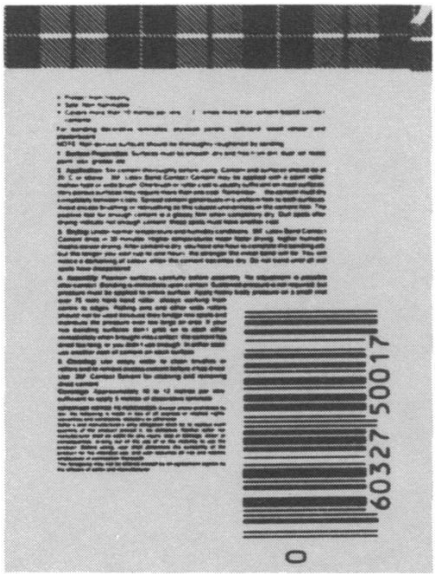

Figure 1 Label (actual size) for contact cement showing directions for use and toxicity warnings. The original label used black type on a red background (1988:22).

One can argue that given contemporary consumer guidelines this scenario would not be repeated. However, it is the premise of this paper that graphic design students have a responsibility to be aware of the potential to harm through careless design practice.

In an essay entitled *The Birth of the User*, Ellen Lupton refers to "the dominant subject of our age…user, a figure conceived as a bundle of needs and impairments –cognitive, physical, emotional. Like a patient or child, the user is a figure to be protected and cared for…" (2004:23). Lupton argues that within the interactive environment the designer has to think globally, has to consider the user and the user, in turn, has a degree of control and expectations based on the technology that they are engaging with (2004:24). In the 21st century designers create products that function across media –a logo has to appeal to users of the Web, cellular phones and tablets –it may appear in print, on a billboard or on a product. In a paper presented at the 2009 DEFSA conference Joubert and Economou concede that "social and environmental design consciousness in South Africa is still in its infancy" (2009:99). Further, they point out that much needs to be done at educational level in order to redress the balance between South Africa and first world countries when it comes to the personal value system "that incorporates social and environmental ethics" (Joubert & Economou 2009:100) with graphic design. In 2002 the Department of Arts and Culture (DAC) was created to "develop and preserve South African culture to ensure social cohesion and nation-building" (Cadle 2009:30). It is within this context that educators of graphic design in South Africa must consider whether the current approach taught within most graphic design departments answers to the user-centred, human-based needs of a diverse South African audience.

Human-centred design

The inclusion of human-centred principles into design solutions is not new. At the beginning of the 20th century the Bauhaus School (1919-1933) embraced the notion of integrating craft, existing technology, art and design in the creation of and design of various products. By providing a space where artists and craftsmen could work cooperatively the Bauhaus created the uber-designer, someone who could conceive and produce aesthetically pleasing, practical objects and who embraced the motto "form follows function". In criticism of the Bauhaus, Winkler (1997:131) commented that "[the Bauhaus] did not question the impact of its design on the users, whose agreement was simply taken for granted." As the user was not an integral part of the conceptualisation or the production of the design outcome the Bauhaus model of design education may not stand up to contemporary scrutiny. It was not until the 1960's that designers began to recognise the individual differences between users and their needs. It can be argued that human-centred design is rooted in ergonomics – the creation of a design solution (be it an item of clothing, a chair or a car) that "fits" whilst considering the needs of and benefitting the user. In support of this view Frascara (1997: available online) points out that commercial advertising for the past 50 years has been human-centred in that rather than being concerned with the physical descriptions of products it has concentrated on the desires and values of the user. One of the definitions of user-centred design is a "process in which the *needs, wants and limitations* of end users of a product are given extensive attention at each stage of the design process (Wikipedia: available online). According to Krippendorff (2006) human-centred design is "ideologically motivated by values that relate to transparency, participation and empowerment through influences and integration of participatory design methods." Increasingly, design is seen as both a commercial practice and a substantial approach of cultural production and according to Akama (2009) designers are defined by what they can enable, not what by what they 'make'.

Design education

In discussing contemporary graphic design education, Heller and Fernandes (2006) comment on the average design programme as providing instruction in "the basics while spotlighting specialities such as magazine layout, book and record covers, posters, advertising, and Web-design in order to provide students with a well-rounded, professional portfolio" (p. 26). In terms of the application of the *needs, wants and limitations* of end-users to graphic design practice, a frequent argument is that designers may find it difficult to translate these to their daily, commercial practice.

It is generally acknowledged that the primary function of a graphic designer may be to organise visual information and communicate messages. Easterby (1984:19) points out that the defining characteristics of a successful design meet at an "intersection of technologies…psychology and visual communication…engineering, ergonomics and printing." It is important to note that for a number of

years several researchers have commented on the glut of information that graphic design students have to contend with within the current scope of design education. Bonsiepe suggested as far back as 1994 that the name of a graphic design course should be changed to Information Design and students should refer to themselves as "info-designers" (p. 48). In order to understand and later, successfully incorporate human-centredness into their design products, graphic design students must be aware of many additional but frequently side-lined components of a designers' education. For example the psychological theory in information display – i.e. the psychological processes used in the interpretation of visual messages by the user as well as the existing user attributes which will assist the user in interpreting that message (Easterby 1984:20-24), is frequently included in interaction design courses but is an aspect almost forgotten in contemporary graphic design education.

Whilst commenting on the evolution of design education Faiola, Davis and Edwards remarked that "students are often not prepared to understand the social context of new media design and development… programs teach technology-driven courses that ignore standard practices, such as a concern for user preferences or an inquiry into the socio-cultural context of the target audience…" (2010:693). As stated previously, user "experience" is increasingly becoming a part of many product development, architecture and interface design programmes. However there is scant agreement on the definition of the "experience" as it applies to the various disciplines. Kocsis (2009:127) points out that "where the digital field is concerned, such disciplines as information design, interaction design, interior exhibition design, installation design, interface design, game design, and architecture have not begun to correspond with one another, nor established a common discourse about the phenomena of 'experience'". In addition, Joubert and Economou (2009:99) quote Sudick (2008) as stating that sustainability is the "new literacy" for the 21st century. As audiences are becoming increasingly visually literate a further concern is that the current curriculum, as offered at VUT, may not meet the needs of the students who wish to engage with these socio-cultural aspects and dissatisfied students "may go elsewhere to find the knowledge and skills they need" (Faiola et al. 2010:694). The concern that frequently underfunded government institutions such as UoT's may not be able to compete with private ones in terms of the state-of-the-art offerings in hard- and software available to students, as well as in the latest developments in curriculum is a valid one.

Stanton and Baber (1998) state that "…in designing products, designers are also designing user activity, which does not occur independently of the product". Understanding how user behaviour or activity can influence graphic design solutions is critical for designers wishing to engage with social responsibility. For example, graphic designers must be aware of characteristics such as font size and legibility when working with design for print, but graphic designers engaged with billboard design should also be aware of aspects such as visual acuity (Smith 1984:172). Visual acuity is based on the angle and dimensions of type in order for it to be legible (and therefore understood) by the viewer. It would be surprising to see characteristics dealing with these important –human-centred – aspects in any contemporary graphic design curriculum at a UoT in South Africa. Unfortunately, given the constraints of a present-day timetable few lecturers would find the time to deal with these, often seen as "unnecessary" or "outdated", aspects of graphic design education.

Traditionally graphic designers have been taught to create design solutions based on client needs as well as the client's aesthetic expectations. Since the inclusion of Web-design components within the graphic design curriculum, students have become more aware of the actual "interaction" of users with their design products. However these aspects are not appropriately integrated within the teaching of the theory component in the traditional subjects of the curriculum such as *Communication Design.* This stems from the perceived "separateness" of these theoretical and practical components, and, although efforts have been made to integrate theory and practice within design briefs, student engagement with the theoretical aspect of the projects remains minimal. Frascara (1998:26) cites an example of a project dealing with the design of safety symbols –the development of an effective visual communication strategy for the prevention of accidents. In that context it is imperative that students have a complete understanding of the theory and design of wayfinding and safety symbols, as a lack of knowledge of either could result in injury or death of the user. He concludes, "It is not enough for the symbols to be beautiful, clear, and visible; these are useful factors, but the real measure of the quality of the design lies in its contribution to the reduction of accidents" (1998:26).

Graphic design education at VUT

Davis identifies emerging trends for competent graphic designers as including an "increasing complexity in the scale of design challenges, thinking about the people for whom we design as participants in the design process" and takes account of "the importance of understanding community" as a key developing practice (2008:2). At the 2006 DEFSA conference, Cape Peninsula University of Technology lecturer Mel Hagen pointed out that locally design education is "out of line" with international trends and highlighted the importance of aligning design education in South Africa to developments in the field (available online). She warned that a failure to do so would result in the breakdown of national developments in design promotion.

Historically, graphic design departments in South Africa were typically situated within the old Technikon system and are now found almost exclusively at, what has become, Universities of Technology. The training associated with the now-defunct Technikon system was firmly entrenched in the vocational realm which resulted in a practicum-heavy curriculum that included minimal engagement with theoretical concepts. This "trade-school" approach was also evident in the former Technical Colleges which, for many years, served as an "entry-point" into the Technikon's graphic design program for matriculants who did not meet the grade in terms of technical ability.

This practicum heavy approach was thus based in and supported by the misconstrued belief that graphic design education is wholly informed and determined by graphic design industry practice and not, as is increasingly believed, by an element of social responsibility. Thus, traditionally graphic design evolved from the physical engagement of students to their practice –it was not rooted in theory (bar a smattering of the history of graphic design) – and, as suggested by McGlashan "design thinking evolved from the process of design making" (2011:326). The students shaped by this system (many of whom are now the lecturers at graphic design departments countrywide) are typical of what Scrivener calls "problem-solvers" –they are familiar with the creation of useful design products or artefacts purely as a response to a known problem (i.e. client brief). Typically upon graduating these "problem-solvers" do not exhibit what Scrivener would label as competencies within a "creative-production" approach. In order to do so the artefacts produced by the "creatively competent" would have to meet the following criteria:

- "*artefacts are a response to issues, concerns and interests*
- *artefacts manifest these issues, concerns and interests*
- *issues, concerns and interests reflect cultural preoccupations*
- *artefacts contribute to human experience*" (McGlashan 2011:238).

Since the establishment of the University of Technology in 2004, an educational institution more engaged with theory and research than the former Technikons, the graphic design curriculum (in the case of this research situated at the Vaal University of Technology - VUT) has included ever-increasing theoretical components. In the future, in order to engage with the notion of human-centred design solutions in their practical work, students will require a sound theoretical base which deals with issues of a social context such as user perceptions and cognitive interactions as well as aspects of sociology such as demographics. Without the application of theory to practice the acquired understanding may remain abstract and possibly erroneous (Faiola et al. 2010:694). Currently most practical subjects within the graphic design curriculum at VUT focus on the production of graphic design outcomes based on skill acquisition and a resulting competency in various design software. This ever-increasing component of software training has expanded from a focus on two design software applications in 1995 to a module which contained five software applications by 2010. Unfortunately, given the technological nature of the graphic design industry the pressure on students to engage with ever-increasing amounts of technology is likely to remain. Through the revision of the existing curriculum obsolete or less-relevant modules (such as printmaking) may be omitted or revised for the future; however, one must remain cognisant of the fact that over-extending the existing curriculum with additional modules may ultimately be problematic.

The current graphic design prospectus at the VUT states that graphic designers are "visual communication problem solvers" who learn how to successfully answer the graphic design needs of their client. Hence the graphic design curriculum at the VUT addresses this premise by producing students who, at the culmination of their three years of study, can create competent, visually engaging design products. However, there is a concern that students are more concerned with the aesthetics of the final product and not with the process of creating a solution with a particular user in mind. Kreye remarked that "design has become a way of finding solutions. Aesthetics is just a part of this process"

(available online). Additionally Eber (2000) declares; “visual media for the sake of effect stops at the surface of the work, and the audience is lost after the initial `wow’” (p. 923). In support Frascara (1998) states that the “solution to a client's need is not the production of the visual communication it is the modification of people's attitudes or abilities in one way or another.” At the VUT graphic design students frequently engage with briefs that require a solution with a “social” slant (such as Sappi Ideas that Matter) but have had little opportunity to provide solutions to the design needs of the local community. In order to address this, in 2009, the graphic design section launched the Graphic Design Initiative (GDi) as a space where students could engage with briefs that serve local users. Although this is a step in the right direction this paper argues for a more holistic approach to the incorporation of social interaction by the inclusion of human-centred principles within the graphic design curriculum.

International trends-an overview

Internationally several Universities and private educational institutions have embraced the notion of human-centred design. Guidelines for companies for the effective implementation of human-centred design solutions into their enterprise structures abound online. Universities of Technology such as Swinburne University of Technology in Melbourne, Australia, have included elective components within the graphic design curriculum which include *Sustainable Design* (“borrowed” from the Civil Engineering department and inclusive of modules such as *Sustainable Development* and *Greening the Industry*), as well as *Climate Change* and *Environmental Management.* In addition the Swinburne course offers a module in *Communication Design Strategy* (which includes the management of “community solutions” which is closely linked to the notion of human-centredness in design) as well as a semester module called *Contemporary Design Issues* which deals specifically with “design for environmental, global and social sustainability” and “concepts of user-centred design” (available online). It can be argued that the above could be viewed in terms of “best curricular practice” and the concepts outlined here should consequently inform other curricula that wish to engage with human-centred principles.

Locally, some South African educational institutions have included aspects of human-centredness in graphic design through the incorporation of units which deal with an element of work-integrated learning and a combination of social responsibility and citizenship. However most of these types of projects still presuppose the altruistic creation of graphic design products for needy communities or are based on the interactions of the University with high school students with the aim of developing more University-ready design applicants. Although these individual projects should be commended and tend to stand on their own merit they do not address the frequent knowledge gap which exists between the designer and client. In England, institutions such as Kingston University as well as the London College of Arts are engaging with issues of social responsibility that stem beyond charity and good intentions. Another good example of this so-called “design altruism” is practiced at Western Michigan University’s School of Art where graphic design students must enrol in the school’s Design Centre for two semesters. The Design Centre provides an opportunity for students to engage with the needs of the University and community at large. In Pasadena the Art Centre College of Design has a similar programme in place.

Conclusion

The graphic design industry has been accused of thriving on income earned by creating misconceptions, rampant consumerism and the virtues of excess so prevalent in contemporary society (Kerr 2008:59). Now, at the beginning of the second decade of the 21st century, the underlying current of social responsibility and human-centredness evident in some design circles has the potential to become mainstream. A framework for sustainable and human-centred design exists in a variety of design fields such as industrial, service and product design. Increasingly, orthodox designers are advocating the benefits of promoting socially responsible roles within their practice.

The current challenge for the graphic design practitioner is to provide users with meaningful experiences. According to Gray, “designing experiences with the user in mind requires new and alternative ways of thinking about the role of design as well as the way it can fulfill human needs…By understanding users through their needs and goals – beyond the traditional marketing profiles – designers can create specifically for the individual at an enriched level” (2004:9). Some designers and educationalists are in agreement that discussions regarding the role of graphic design and sustainability must create a framework for the future of graphic design education.

In support of a new graphic design curriculum, Cadle (2009:36) argues for existing "methodologies [that] need to be adapted accordingly." The proposed framework at the VUT will include aspects of Frascara's model for an effective design process which stresses: "(1) a collaborative approach with stakeholders and end users, (2) an interdisciplinary research approach, and (3) an extended process that includes problem identification in the beginning and evaluative process at the end" (1997:33). A revised, responsive and reflective graphic design curriculum must be based on a combination of components that include interdisciplinary, experiential, emotive and aesthetic design factors resulting in an engaging creative outcome which informs the user and produces a socially responsible, user-aware graphic design graduate.

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Short Biography

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FROM '*BANKING'* TO *'STOCKVEL'*: A CRITICAL REFLECTION ON THE DEVELOPMENT OF LITERACIES PROGRAMMES FOR ENTRANCE LEVEL THEORY OF ART AND DESIGN STUDENTS

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Abstract

This paper presents an analytical autoethnographic reflection on the adaptations in approach to the teaching and learning of literacies that led to the writing and research-intensive literacies programme currently presented to first year visual arts students. It maps our practices to theory, and specifically to those of Freire, Lave and Wenger, Mezirow and the transformational education theorists. Experience tells us that many students entering our programmes are not enthused at the idea of theorizing and writing about art and design, nor are they equipped with the ability to do so. In our quest to find solutions to the 'problem' a range of programmatic interventions were introduced over a period of time, including intensive writer-respondent support, with an ever-increasing hands-on engagement on the part of the disciplinary lecturer. The result was that when a smoothly flowing textual product was produced its ownership was contestable, as the inputs from the 'bank' of support were not discernable from those of the student. After reflection, the programme was refocused into its present 'stokvel' form, (the stokvel being based on traditional African concepts of self-help and mutual support, with a group of people contributing to a collective fund from which each, individually, can draw benefits), wherein the ownership of and responsibility for the learning process has been returned to the students, who experience situated learning in a community of practice, with the disciplinary lecturer and the academic-literacies practitioner acting as facilitators.

Key Words: *banking, stokvel, literacies, situated learning, community of practice*

Introduction

Art students want to make art. They do not want to write about art. This may be a generalization, but it is not far from the truth in my experience. Another truth, however unpalatable it is for the entry-level student, is that there is an expectation that graduates in the visual arts should be able to write analytically and reflectively about art and design production, and should be capable of positioning their own works and practice and those of other visual artists within conceptual frameworks. It is expected that theorizing play an integral and important role in their lives as artists, designers and creative practitioners in the public sphere, who are viewed as the 'locus' of cultural mediation. (Gaztambide-Fernández 2008:251)

Our challenge has been to find ways to bring students into the disciplinary discourse and to facilitate the acquisition of visual and textual literacies while at the same time working to assist them to develop a discourse voice that is uniquely their own. These objectives inform the Theory of Art and Design curriculum we present as part of our bigger project to provide a transformative learning experience to our entry-level students.

In this autoethnogaphic research project, I make my own experience as a teacher-practitioner and researcher the topic of investigation in its own right (Ellis & Bochner 2000). Over a number of years I have worked in cooperation with colleagues on 'semi-integrated' and 'integrated initiatives' (Warren 2002:86) intended to develop literacies and to bring students to the table, with regards to writing in the discipline. I have felt a growing frustration with the outcomes of these initiatives, and with what I saw as an ongoing co-dependency between student and teacher, with many students seemingly assuming the role of passengers, and with the disciplinary-practitioners (me in this case) and the language and literacies-practitioners swayed into various forms of over-compensation.

Perselli (2005:67) speaks about the need for 'disrupting the self' in order to establish a discourse identity. Mostly, in my experience, our entry-level students are not keen on finding themselves disrupted or discomfited or shaken out of their current frames of reference and worldview, when it comes to the production of written texts. I found that I was able to 'bestow' disciplinary content knowledge on students but my perception was that they did not take ownership of it, internalize it, or transform it in the way I hoped they would. To generalize, a majority mimicked, plagiarized and regurgitated and then erased the information from their minds at the end of the academic year. They did not love, own, challenge or even enter the discourse, certainly not in the way they engage in their studio work.

The frustration I expressed in my teaching journals echoed that voiced by my colleagues in the corridors and coffee room of our school. I turned to the theorists in an attempt to develop a better understanding of the situation. The mapping of theory to our practice helped me to identify the possible root cause of some of our failures. What I concluded was that in our desire to compensate for the perceived shortcomings of our incoming students in terms of literacies and disciplinary curiosity, we had unwittingly fallen into the trap of applying what Freire (1972:71) refers to as a 'banking' methodology of teaching.

In the research on which this article is based I retraced the series of adaptations in approach to the teaching and learning of literacies that we had introduced over a number of years, all of which had failed to live up to our expectations. Making use of the literature, I put theory into practice and mapped out the model for the Writing and Research Intensive Programme (WRIP), which was designed and developed in response to the identified shortcomings of the previous methodologies.

The WRIP sets out to address the possible root cause of the shortcomings, rather than offering yet another stopgap solution to the literacies 'problem'. It is grounded in the writings of Freire (1972), and Mezirow (1997), and it defers both to the literacies model developed by Nichols and Brenner (2009) and to the community of practice focused model (Lave & Wenger 1998) used in our studio modules.

The WRIP can be compared to the traditional 'stockvel', which Lukhele (1990) explains as a type of communal savings and buying group, in which the members have a shared commitment to contribute money to a common pool, from which they all benefit in turn. The members of the 'stockvel' community are honour bound to support one another in times of need, and there is social support as well as financial (or in our case academic) commitment and benefit to all the members.

In the WRIP he ownership of (and responsibility for) the learning process is returned to the students themselves. I suggest that our initial experience of the programme show that this situated learning in a community of practice approach has the potential to transform the entry-level students teaching and learning experience of the theoretical modules as well as that of the disciplinary-practitioner.

Chronology of literacies support initiatives

The challenge of assisting entry-level students to acquire visual and textual literacies is not a new one. By the late 1990's the literacy levels of our incoming students had become a topic of concern and critical comment (Allen 1998). Over the years we attempted a range of solutions. In 2002 the institution began to provide Writing Centre (WC) support and our students began to make limited and often unwilling use of the WC, discussing their assignment with a consultant, then handing in their drafts for editing, thereby disengaging themselves from responsibility in the 'fixing' process.

In 2008 the WC adopted the writer-respondent approach, modeled on Jacobs' (2007) practices. Disciplinary-practitioners and language and literacies-practitioners started to work in co-operation to develop student literacies, presenting workshops wherein Theory of Art and Design assignment topics were explicated, and best practice writing examples were analyzed. Students could voluntarily access writing assistance through the WC, with electronic submission of drafts for consultants to respond to using Track Change applications.

Along with my colleagues I observed a disjoin between the expectations of the writing and the content experts, with the WC practitioners responding to the structure but understandably lacking a depth of disciplinary content. The result was that visual arts disciplinary specialists, myself amongst them, took

on more and more writer-respondent responsibilities and became increasingly committed to the provision of writing and literacies support.

In 2009 the writer-respondent approach was integrated into a newly initiated pilot in-department trans-disciplinary project where a language and literacies-practitioner worked *within* our own department, in close co-operation with the disciplinary-practitioner, to present a mixed model for the Theory of Art and Design and Communication modules, intended to facilitate shared literacy practices. Hodges (1997: 78 in Quinn 2007:1) says that research has shown that teaching *about* writing in a decontextualized way is not as effective as helping students with their writing as part of the mainstream courses they are studying.

The mixed model, which was focused on the development of literacies and the provision of intensive writer-respondent support, was intended to engage students, and bring them into the discipline. It focused on three aspects: small group tutorials of 8-10 students, which the practitioner and the language and literacies-practitioner presented together to explicate assignment topics; the ready availability of both the disciplinary-practitioner and the language and literacies-practitioner to assist the students to craft their essays; and the rigorous application of the writer-respondent approach, with the student submitting multiple drafts of the essays and the disciplinary-practitioner and the language and literacies-practitioner responding to the drafts with both formative commentary and summative assessment (Duker 2009).

The result was an improvement in the writing generated by the top quadrant of students. However the ownership of their smoothly flowing textual product was contestable, as the inputs from the 'bank' of support - the teacher, literacies specialists and writer-respondents, were not discernable from those of the student. Weaker students, specifically those who were not home-language English speakers, did not seem to retain even the grammatical accuracies they had been assisted to acquire from one assignment to the next.

Feedback indicated that the intensive small group tutoring was disruptive to the students studio work, causing resentment from both staff and students, when they were drawn out of the studios for their scheduled sessions.

Statistically few students actively sought out either the disciplinary or the language and literacies-practitioner to engage in an active discussion on a one-to-one basis on the structuring or content of assignments. Instead students relied on the written feedback and 'correcting' of their drafts. The language and literacies-practitioner observed that the provision of detailed written responses to the electronically submitted drafts had drained her energies and that a large number of students had not engage decisively with the writer responses or made the changes as advised.

We agreed that the majority of students were still not actively and critically engaging with the processes of constructing meaning or writing in the way we had anticipated. As we worked harder and harder to achieve learning 'for' our students I became increasingly disenchanted with the writer-respondent model, and resolved to look for alternative solutions to the student literacies 'problem'.

Review of literature

Single and double loop problem-solving models

If you want to solve a problem then you need to get to the root cause of the problem and address that, rather than simply trying to fix the problem itself. Put in a nutshell that is the thinking behind the range of organizational change, problem solving, learning and mental models developed by Argyris (1999) Kim (1993) and others.

Argyris (1999:68) and Kim 1993:25-28) present organizational learning models based on double loop solution finding for (organizational) problems. They show that in a single loop model once a problem has been identified, a strategy is developed that addresses the immediate problem, then a solution is put forward and action is taken that is intended to solve the problem. When the results are evaluated and it is found that there is either a match or a mismatch between the problem and the solution, if there is a mismatch the planner devises a new strategy intended to fix the problem. Inevitably when a

different but related problem is identified, it too is dealt with in isolation, without taking the bigger picture into account, and the same cycle is repeated.

In the double loop model when a problem is identified the solution-finding starts not with the problem, but with the source. Argyris (1999:68) calls this going back to the governing variables, Kim (1993:28) refers to going back to the mental model and they suggest that by deconstructing a problem in this way and finding a way to re-articulate it you are more likely to find a long-term solution, because the structure (the mental model) drives behavior (the problem). So if you want to change the behavior you need to change the structure that is producing the behavior.

Freire's critical pedagogy

Freire's description of the traditional 'banking' method of learning resonated, in the light of the observations that the students were not retaining the literacies they had 'acquired' from one assignment to the next, despite the elevated levels of support and feedback. He says that when students become dependent on the teacher for knowledge and do not learn to think for themselves 'The more students work at storing the deposits entrusted to them, the less they develop the critical consciousness which would result in their intervention in the world as transformers of that world'. (Freire 1972:60)

Freire describes three stages in the development of critical consciousness Stage one being a period of 'intransitive thought' characterized by a sense of vulnerability and disempowerment. Stage two a state of 'semitransitive thought', with students beginning to address problems and apply 'their minds and take action to effect change', but are not yet at the point where they are able to act as 'change' agents, being still dependent on others to take charge in challenging circumstances. In stage three, 'critical transitivity', students have attained autonomy and are able to think critically and 'merge critical thought with critical action to effect change' (Kitchenham 2008:108).

Mezirow and transformational educational theory

Mezirow (1997:5) says that transformative learning develops autonomous thinking. His models are influenced by Habermas (1971) and Freire (1973) and can be read as a 'recipe' for actualizing the development of the critical consciousness that Freire calls for.

For Mezirow, our point of view emerges from our habits of mind, into which is woven our character, worldview, and our habitual ways of interpretation. For perspective transformation to occur, for our habits of mind to change, both the perspective we use to construct meanings, and our frames of reference, need to be interrogated. Kitchenham (2008) suggests that Mezirow uses frames of reference as 'a kind of universal construct' to cover a broad array of ways of knowing and of multiple intelligences, in addition to an 'eclectic assortment' of mixed categories including habits of mind, world view, religious and political orientation and beliefs, interpersonal relationships, cultural and ideological bias, stereotyped attitudes and practices, moral-ethical norms, emotional / psychological understandings and aesthetic values.

Lave and Wenger and situated learning in a community of practice

Lave and Wenger (1991,1998) posit a 'social concept' of learning where meaning and identity are negotiated in communities of practice, which are groups or collectives of people with a common interest or bond, who are engaged in a joint enterprise (1998:2). They see learning as part of the lived experience of participating in an active engagement with the world (1998:3), and social practices as the driver, or 'primary generative phenomenon' of learning (1991:4). They talk about active or 'situated' learning (1991: 32) as being embedded in the context of culture, and being focused on doing (practice), belonging (community), becoming (identity) and experience (meaning) (1991:4). Knowledge is something that is acquired through that activeness, and meaning is the product of that knowledge. Learning activities in this context are engaged and dilemma driven, and there is a distinction between intentional instruction and information dissemination, and learning as they understand it, where the emphasis is on the transformation of the whole person, not just the reception of factual information. They make a distinction between 'traditional' apprenticeship, which is instruction based, and 'situated' learning (1991:32) which I interpret them to suggest is formative and holistic in approach, and they believe instruction must be done in 'complex, social environments' (1991:40).

Brenner and Nichols applied theory model

Brenner and Nichols (2009) refer to 'active learning' through the 'the implementation of active classroom learning techniques such as the inquiry approach'. This approach forms the foundation of a literacies programme they presented at Wits University. They draw connections between learning, critical thinking, reading critically, and writing, and they elaborate on the need for students to share ideas and talk about and apply that which they are learning, so that it becomes part of themselves.
Their students write *in* the programme, as opposed to receiving 'first aid' through the intervention of writer-respondents. They propose practical suggestions for writing intensive interventions and their model focuses on 'writing as thinking', where students write in their peer groups in a supported teaching and learning environment, as opposed to the traditional model of assignment writing, which sees the student going home to write in isolation.

NMMU Introductory Studies studio teaching applied theory model

Like the Brenner and Nichols (2009) model, our studio-teaching methodology places much emphasis on the positive role of the community of practice. In introducing students to the studio disciplines, we use a mixed-model approach (Duker 2009). We start with what Anderson (2006) refers to as cognitive apprenticeship where 'the disciplinary-practitioner is presented as the expert and the student is styled as an apprentice and is inducted in a highly supported way into the discipline using the grammatical approach that artists and apprentices have followed over the centuries' (Duker 2009). We introduce students to the range of complex literacies embedded in the design grammars, including what Carter (2008:70) describes as academic, visual, societal, material, scientific, mathematical, spatial and graphic literacies. Studio practitioners set out to be extremely explicit, in their articulation of disciplinary concepts and mores.

As the year progresses the studio practitioners adopt 'a different role, that of learning companions / co-constructors of knowledge, and the emphasis is placed on the building of a supportive community of practice, wherein students can forge their identities in an engagement with their teachers and their peers' (Duker 2009). Ludema (2001: 71) suggests that in a community of practice there is a strong social bonding and the members experience a sense of safety and security that enables them to take conceptual and intellectual risks. This is confirmed by the fact that even when there are no formal classes, students are to found in the studios working alongside their peers, in a close engagement, expecting and receiving support and critical engagement.

Methodology

In carrying out the research on which this paper is based, in which my experience as teacher, practitioner and researcher was the topic of investigation (Ellis & Bochner 2000). I made use of an analytic approach, aligned to Anderson (2006:378) which requires (1) complete member researcher status, (2) analytic reflexivity, (3) narrative visibility of the researcher's self (4) dialogue with informants beyond the self, and (5) commitment to developing some form of theoretical understanding of broader social phenomena.

The research is descriptive and interpretive, and it draws on the writings of arrange of theorists (Freire, Mezirow, Lave and Wenger, Bandura, Perselli, Argyris and Schon), amongst others, as well as on my own (phenomenological) observations, which were recorded in the form of journals and which include reflections on dialogue with colleagues and students, and a chronological recording of my own experience of the teaching and learning environment.

Discussion

The identification of the problem

In past attempts to bring the students into the discourse, and to improve their literacy levels, the application of single loop problem solving methods (Argyris 1999:68) had resulted in a range of 'solutions' revolving around the supply of support, most of which put the burden of 'correcting' on the shoulders of the academics. Each solution had brought with it new problems. What was common to

them all was that they were all disciplinary-specialist focused, rather than being student-centred. By our own admission the solutions had failed to fully address the identified problems.

When the double loop method, which required of us to go back to the root cause, was applied, and the governing variables (Argyris 1999:69) or mental model, (Kim 1993:25-28) were deconstructed, we faced the realization that our lack of success in persuading students to engage with the discourse in its textual form was symptomatic of structural problems. Specifically, these problems related to the conceptual framework and methodologies underpinning the interventions, which had disempowered students, who had in effect become passengers on their own learning journeys, whilst the disciplinary specialists occupied the driving seats as the problem-solvers.

It seemed that the majority of our students were not moving beyond Friere's Stage 2 (Kitchenham 2008:108), and that the disciplinary-practitioner and the language and literacies-practitioner (the writer-respondents) with their good intentions, were complicit in the students inability to free themselves from a dependency on others to solve their academic problems. Freire's model proved useful in understanding the uneasy and at times resentful dependency that students had developed on the writer-respondents, one that was reinforced by the intensity of support that the writer-respondent method provides. The weaker the student, the greater the writer-respondents input, and the efforts to support, the more chance that the student regressed from Stage 2 back to Stage 1, and stopped trying. We appeared to have fallen into a trap of our own making.

Simplistically put, the purpose of transformative education is to provide learning opportunities that allow for the possibility of the student being changed by what he or she is exposed to, in a meaningful way, or that at least provide the opportunity for the students to interrogate their own frames of reference. Transformative education is therefore oppositional to banking education, where acquired information is stored, and regurgitated rather than being synthesized or acting as a catalyst for some form of transformation. According to Herod (2002) in Orey (online: no date) transformative learning is learning that purposively questions assumptions, beliefs, feelings, and perspectives in order to grow or mature, personally and intellectually. It was clear that, because of the way the mixed model programme was structured, with its focus on lecturer-dominated tutorials, and its intensive writer-respondent support, there were inadequate opportunities for students to reflect, to interrogate their own world views, to exchange ideas and question assumptions, or to move outside what Mezirow refers to as their 'habits of mind' (Kitchenham 2008:118), to construct new meanings and to find something of their own to say.

Drawing on the literature, and on the examples of theory in practice (Brenner & Nichols 2009, Duker 2009), the objective was to develop a framework and methodology for a revised programme that would support the development of literacies and disciplinary voice, whilst at the same time facilitating the student's academic autonomy and lessening the reliance on the writing and disciplinary-practitioners to act as the language and meaning problem-fixers.

The Writing and Research Intensive Programme (WRIP) design

The objective was to move from the banking and reparative writer-respondent methods to a design based on an interpretation of Freire (1972) and Mezirow's (1997) theories of learning (Figure 1).

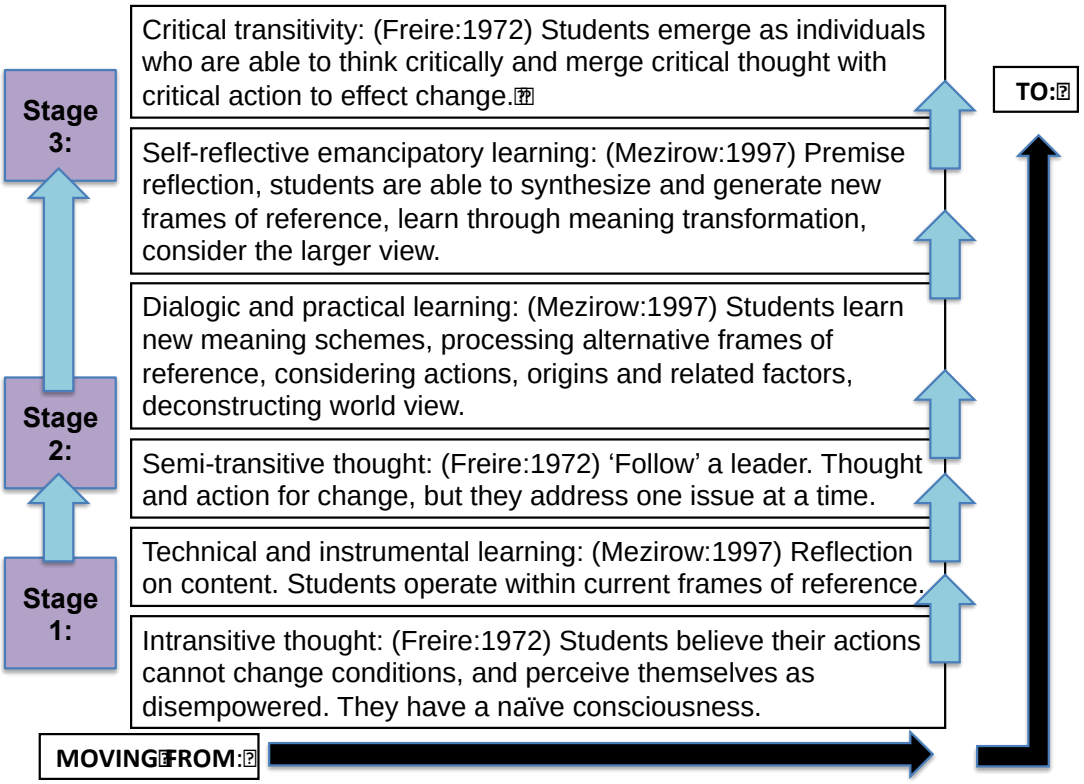

Figure 1: Moving from the Freireian 'intransitive' to 'critical transitivity' drawing on Mezirow's theories

The WRIP design would be based on a managed transition from cognitive apprenticeship to an experience of 'situated learning' in a community of practice. There would be time during each block for gallery visits, extensive group work including shared exercises, debate and discussion, collective and individual research, focused reading for academic purposes, written and visual journaling, as well as the completion of formal academic assignments through a drafting and redrafting process supported by peer reader response, and peer and self-assessments. Students would write within the supported community, although they would be able to take assignments home to complete, when and if they needed solitude in which to write (Figure 2).

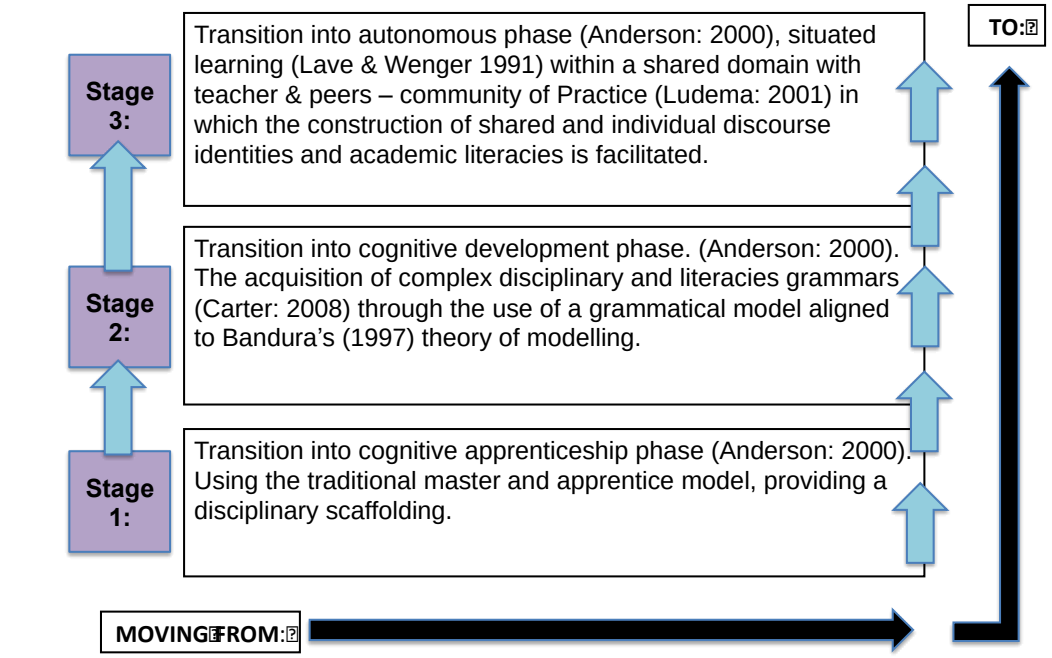

Figure 2: Moving from Anderson's 'cognitive apprenticeship' towards 'situated' learning in a community of practice

Four writing and research-intensive workshops of stepped conceptual intensity, each a week long in duration, were planned. Each block would build on the previous one, with an ever-increasing movement towards the acquisition of critical thinking skills, autonomy and critical consciousness (Figure 3).

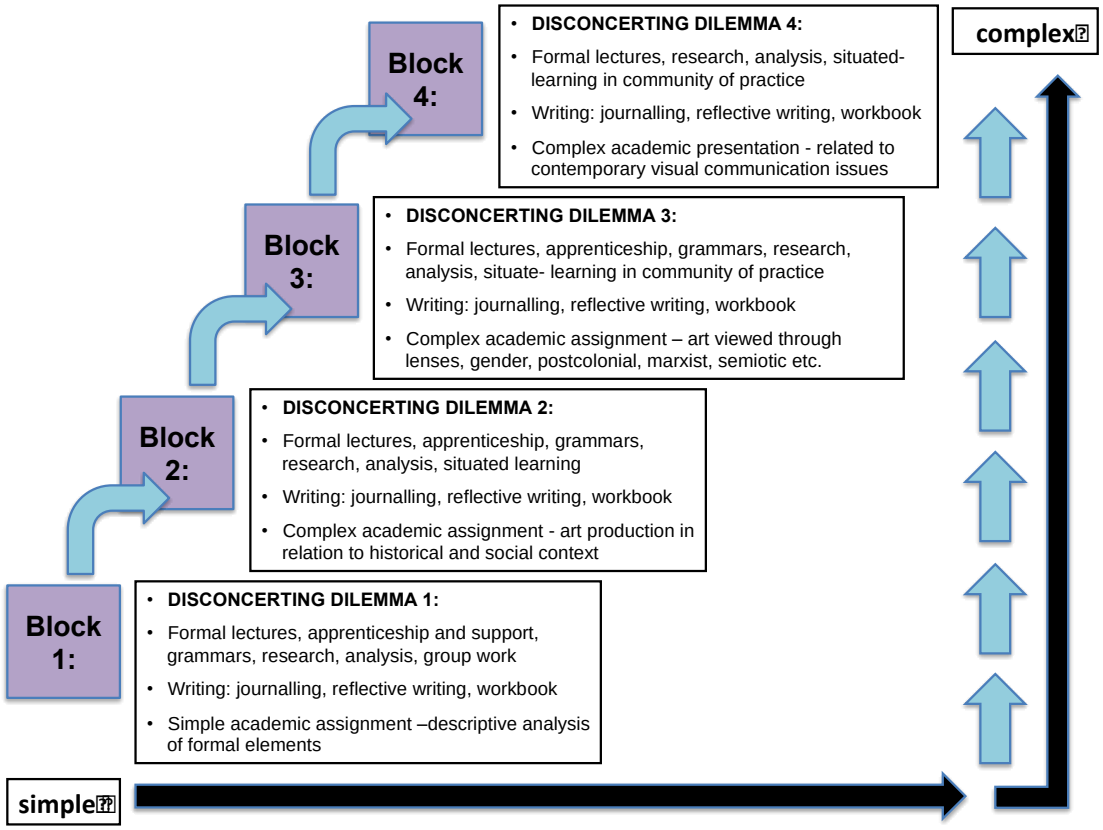

Figure 3: Stepped cycle of learning

Activities would be linked to the phases of transformative learning (Figure 4). The students would attend in groups of 25, and each block would start with a short, supportive apprentice / master introductory stage, followed by an intensive grammatical acquisition stage, and finally, the major methodological focus would be placed on the activities in the community of practice stage At the end of this process assignments would be formally assessed by both the disciplinary and the language and literacies-practitioner.

Figure 4: Relating Mezirow's 10 Phases of Transformative learning (Kitchenham 2008:105) to the WRIP active learning cycle

Findings

There are indications that the community of practice focused WRIP that was presented for the first time in 2010 is proving to be a facilitating space for students. Whilst we have not yet established whether they retain the benefits in the long-term, they are seen to be building and retaining competencies from one assignment to the next, which is a positive first step. They engage more critically in writing and research than our previous students did, without as much need for the disciplinary and literacies-practitioners to drive them, or to solve their problems for them. Whilst this is undeniably a subjective observation, from my perspective, as the disciplinary-practitioner, I experience them as more actively involved, not only in the WRIP blocks, but also during and after the formal lectures, when there is an increased level of questioning and engagement.

Freire's cautions about the dangers of the banking approach conjure up a picture of the student as an empty piggy bank, waiting passively to be filled by the owner of the disciplinary knowledge and information. My experience to date is that the WRIP the peer group of students and the disciplinary and literacies-practitioners become members of a disciplinary community of practice that can be likened to a stockvel. The stockvel, though it is also a means of banking, and it also focuses on the accumulation of savings, has a different conceptual underpinning and a different operating system. It is one based on traditional African concepts of self-help and mutual support, with a group of people contributing to a collective fund from which each, individually, draws benefits in a rotation, and where

there is a social as well as a financial commitment and a commitment to support one another (Lukhele 1990). In our community of practice both the students and the disciplinary and literacies-practitioners draw benefits and build disciplinary capital as we engage in the practices of teaching and learning.

Conclusions

This paper has focused on one aspect of the ongoing longitudinal analytic autoethnographic research project in which I theorize my own teaching and learning practices. In it I have reflected on the process through which the WRIP came into being. I have traced the chronology of attempts at solving the dilemma we face, namely that students are unwilling to engage in theorizing about art and design, and often lack the literacies to do this effectively. I have described how I turned to the theorists for understanding, as we looked for the root causes of this disaffection, and how, using a double-loop problem solving model, I came to the (in retrospect obvious) conclusion that, with the best intentions we were teaching using a banking methodology that diminished, rather than increased, the students potential to succeed.

Through the WRIP I believe we have begun to move to extract ourselves from the deficit position into which we maneuvered ourselves over the previous few years, in our well-intentioned attempts to 'make things right' for our students.

This research has already served a cathartic purpose for me, as it has allowed me to pause and reflect on how *I* experience the teaching and learning situation, something that disciplinary-practitioners maybe omit to do, as they pressurize themselves to find the 'right' approach to helping students. My reflections and findings may well resonate with specialists from other disciplines, who find themselves in similar situations where they have taken on the role of what Jansen (2011) refers to as 'professor nanny', rather than facilitating an environment wherein the students are able to take ownership of their own learning processes, and disciplinary specialists can breathe a sigh of relief.

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Short Biography

Mary Duker is the Director of the School of Music, Art and Design, Nelson Mandela Metropolitan University, Port Elizabeth. Her work in progress is situated in a context of global, national and institutional imperatives to improve teaching and learning. Her interests lie in facilitating access to the visual arts disciplines and in the design of curricula that scaffold the teaching and learning of literacies for diverse, vulnerable, but aspirational groups of students.

THE PROBLEM WITH PLAGIARISM

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Abstract

This study examines the concept of visual plagiarism within a contemporary cultural context shaped by postmodern design theory and the digital information age, as a challenging concern for tertiary level graphic design education.

This paper does not condone plagiarism, however it asks design lecturers to reconsider taken-for-granted assumptions that students operate in an unambiguous environment of 'wrong' and 'right' when it comes to the concept of visual plagiarism. It seems that graphic design students find it increasingly difficult to navigating the grey areas between plagiarism, appropriation, homage, inspiration, 'referencing', coincidence and 'accident'. Disturbing as this may be at an ethical level, it is perhaps not surprising when one considers the contemporary world in which we live and work. This environment is actively shaped by postmodern ideas of appropriation, digital 'sampling', digital reproduction and the Internet experience as an infinite repository (resource) of textual and visual information. The 'remix' realm within which students operate reinforces postmodern concepts of appropriation and affect students' understanding of and attitude towards plagiarism. Furthermore, in a postmodern design context, the term plagiarism can be problematic, as there seems little consensus as to where the lines can be drawn between 'borrowing' or 'referencing' (postmodern appropriation or pastiche) and 'stealing' (plagiarism).

This paper briefly describes and contextualises terms relating to the topic, including pastiche, parody, and appropriation. Secondly, the features of contemporary culture including issues such as digital reproduction and the Internet experience are examined insofar as they can be seen to construct, encourage or support understandings relating to plagiarism. As a qualitative study this paper assimilates information from a variety of literature sources including Fredric Jameson's work on the postmodern concept of 'pastiche' to map out terms and concepts which provide a theoretical foundation.

A critical evaluation of the theories and concepts surrounding visual plagiarism and of the complex, often-contradictory contexts within which students operate, provides insight into the challenges faced, as a first step approach towards addressing the problem in a pre-emptive rather than punitive manner.

Key Words: *plagiarisms, visual communication, education, graphic design, appropriation*

Introduction

The Merriam-Webster Dictionary (2011) defines the act of plagiarism as "to steal and pass off (the ideas or words of another) as one's own", "use (another's production) without crediting the source", "to commit literary theft" and/or "present as new and original an idea or product derived from an existing source". Fundamentally, plagiarism is about copying without giving appropriate credit to the source. In graphic design practice visual plagiarism refers to "the unauthorized use or close imitation of existing artwork and the representation of it as one's own original work" (MacAvery Kane 2011).

In the university context, plagiarism is viewed as an academic offence resulting in disciplinary action for the offender. A distinction can be made between plagiarism motivated by intent to cheat or lie, or occurring out of ignorance or inexperience of correct attribution or referencing techniques. The legal implications of intent in plagiarism are not fixed (Corbin 2007:1). Some research contends that intent cannot be considered as a determining factor in a plagiarism defence (Standler 2000:2). Offering lack of intent as defence can become an easy 'blanket' plea for any accused plagiarist and "intention is arguably the most subjective… and also the most difficult to ascertain" (Sutherland-Smith 2008:73). Alternatively, some studies insists that an element of intent must be present to convict a plagiarist and

that inexperience or negligence should be considered a valid defence, specifically in education where students are still developing knowledge and skills (Beute, Van Aswegen, & Winberg 2008, Howard 1995:788, Sutherland-Smith 2008:32).

It is perceived that incidents of plagiarism in universities are on the increase (Park 2003:471-472) and as such, most universities have policy documents in place that define plagiarism and outline the consequences of plagiarism. Policy documents however, are not designed for the classroom and students need to be taken through a process where policies are contextualised and explained, and models of good and bad practice are provided (McCarthy & Rogerson 2009:4). Encouragingly, regarding written plagiarism, there are numerous comprehensive guides available to tutor students and to contextualise the topic and provide practical information on how to reference appropriately and avoid plagiarism. In creative fields however, specifically the visual arts, there does not seem to be an equivalent thorough and matured approach. An informal online search and review of library documents using keywords referring to plagiarism in writing and plagiarism in the visual arts respectively, highlight the comparative differences in regularity and comprehensiveness of information sources available for use in the classroom. Moreover, in the visual arts there is perhaps still much to be done to develop policies that can deal with the unique attributes of the discipline. *The Guardian*, a UK newspaper quotes Dr Margo Blythman, academic director of teaching and learning at the University of the Arts London: "I'm not sure it will be possible to come up with a definitive set of guidelines," she says, "but at least people will be forced to discuss plagiarism. At present, nobody in the arts really seems to want to even think about it" (in Crace 2007). Anecdotal evidence suggests that without comprehensive guides for visual arts students, lecturers rely on policy documents, which in many instances use definitions similar to the ones provided at the beginning of this paper. These types of policy definitions do incorporate visual plagiarism broadly, but do not provide adequately for formative learning opportunities where students can engage with the issue thoroughly.

As this paper investigates, visual plagiarism is a complex and in some ways problematic notion for graphic design students, as theoretical postmodern conceptions of appropriation and pastiche, as well as the effects of mass digitalisation of the information age undermine conventional notions of what constitutes visual plagiarism and affect students' capacity to work within visual plagiarism policies. As exploratory research, this paper examines the impact of digital information technology, including copy culture, digital reproduction and the Internet experience, insofar as it can be seen to construct, encourage or support understandings relating to plagiarism. Terms relating to the idea of what constitutes legitimate and illegitimate copying in graphic design will be described through the lens of postmodern theory, including the concepts of pastiche and appropriation, as well as parody, homage, 'accident' and 'coincidence'.

Digitisation, the Internet and World Wide Web

> … the Internet produces a deep cultural belief that information is, legitimately, copyable and redistributable. Copying is more than just copyright infringement of music and software. It is a defining, multi- faceted feature of Internet behaviour and culture. (Allen 2003:2)

The Internet has been implicated in the perceived increase of plagiarism incidents at universities (Sutherland-Smith 2008:101). Even further, "some educators view the Internet as the greatest plagiarism tool since the copy machine" (Mayfield 2001:1). This culpability manifests in a variety of ways, including, technical and cultural implications of digitalisation and replication, such as changing perceptions of authorship and originality (Fitzpatrick 2011:14) and the notion of 'copy culture' (Allen 2003).

The ever-increasing profusion of digitalised information characterises the contemporary information age. Graphic design itself has been revolutionised by digitalisation, as designs are now produced on computer in contrast to previous mechanical systems. Today more than ever before, graphic design visuals are available on the Web in various guises – as part of portfolio showcases, historical and reference repositories, as well as commercial and/or free stock libraries, amongst others. Search engines, such as Google, support image searches and can present graphic designers with a vast array of designs or visual elements including vector graphics, photographs or illustrations that can be used as inspiration, examples or components within designs. It is common practice for designers to surround themselves with 'inspiration' and graphic examples that they can draw from as part of the design process. With digitalisation, boundaries are dissolving as the tools for the production and consumption of graphic designs are brought together onto the computer screen. The problem for

lecturers occurs when the source of inspiration becomes the final design, or is too similar to the final design, and is then submitted for assessment. Other problems implicating plagiarism occur when designs contain elements that have not been appropriately attributed. *Wired* Magazine cites John Barrie, founder of the plagiarism detection tool Turnitin, “students are using the Net as a 2 billion-page searchable, cut-able encyclopaedia" (Mayfield 2001:1).

Today, the technical facilities inherent in the Internet and digitalisation encourage a culture of copying. Digitalisation facilitates easy access to information via vast storage capacities online and locally and the easy replication of even large amounts of information with effortless copy and paste functionality. Copying is pervasive online, in subtle ways like the cashing of Websites and more obvious ways, such as the use of the use of ‘mirror sites’ (Allen 2003:2). This is further evident in the replicating of information that takes place in ‘cc-ing’ contacts into email messages, re-posting information on blogs, the use of mailing lists and built-in functionality in a growing number of websites that allows one to link/replicate information to utilities such as social media sites and re-post information with the click of a button or two. Lethem (2007) explains “[i]n the contemporary world, though, the act of ‘copying’ is in no meaningful sense equivalent to an infringement—we make a copy every time we accept an emailed text, or send or forward one—and is impossible anymore to regulate or even describe”. In addition, ever more, information is being saved or downloaded from the Web, even where the usual saving processes are not permitted, there are numerous ‘download’ utilities available that can circumvent security systems that have been embedded precisely to protect copyright. Taking this further, Allen (2003:2) points to a misconception, amongst significantly the younger generation, that everything on the Internet is ‘free’.

The fact that a significant amount of ‘free’ information – including freeware or shareware utilities, books, documents, images, graphics, fonts, music and movies – certainly adds to this impression. The free nature of some information, in conjunction with the seeming abundance that infinite digital copying offers, can colour the assumption of users that all information, as long as it can be accessed and saved electronically, regardless of copyright protection or ownership, is also ‘free’. In addition to this, the Internet was built and developed in a community of information sharing and the “original framework of the Internet may be characterized as cooperative and non-proprietary” (Bruketta 2010:4). There still exists a strong influence of openness, sharing and community evident in Web models such as wikis and open source software development. Here the sharing, building and transforming of information are seen as ways of enabling greater creativity and innovation in a communal way. However, in an academic scenario the approach is different, as students are often assessed as individuals and are required to recognise authorship and attribution in a conventional and systematic way. Graphic design students assimilate and replicate digital information almost unconsciously on a daily basis as they ‘play’ – browsing and saving images and Web pages for visual inspiration, while engaging with social media sites such as Facebook and copying music or downloading movies, and simultaneously ‘work’ – developing graphic design work for academic assignments. The computer as an Internet connected entity blurs many boundaries and students are finding it more challenging to distinguish between the “different requirements of academic work and the enticing practices of being online” (Allen 2003:4).

In an age of information overload, permeated with infinite digital copies, the concept of ‘original’ becomes perhaps difficult to identify and as the idea of authorship and originality is dissolving, a new generation of students are emerging who do not necessarily recognise plagiarism in a conventional way. A *New York Times* magazine article comments accordingly (Gabriel 2010:1):

> It is a disconnect that is growing in the Internet age as concepts of intellectual property, copyright and originality are under assault in the unbridled exchange of online information, say educators who study plagiarism… Digital technology makes copying and pasting easy, of course. But that is the least of it. The Internet may also be redefining how students — who came of age with music file-sharing, Wikipedia and Web-linking — understand the concept of authorship and the singularity of any text or image.

Copy culture, Sampling and Remix are creative cultural practices and concepts that have emerged as responses to digital replication (multiplication) and assimilation processes and attest to the significant cultural shifts that digital technology and the Internet offers. These terms refer to a variety of related creative practices of copying and combining pre-existing samples of music/sound, video and art, which challenge the boundaries of copyright law and concepts of originality and authorship. Here conventional boundaries blur and a reciprocal influence emerges between consumer and producer

and copy and ‘original’. ‘Amateur’ consumers become creative ‘producers’ as they assimilate samples of commercially produced sound, images and video and reconstitute them as creative multimedia assemblages using digital home computers and equipment. These remix practices lead to theoretical debates regarding artistic and creative integrity as well as copyright and ownership implications. Legitimacy aside, for an emerging generation the very act of ‘remixing’ in itself nullifies the need to attribute ownership or reference to the authors of the components, as the product that results from remixing is considered to be ‘new’ and ‘original’ (Bruketta 2010:3). Graphic design students as part of the emergent culture are not unaffected and it stands to reason that their perceptions of what constitutes ‘original’ and ‘copyright’, important factors relating to the concept of plagiarism, may not be in line with what is considered convention, not to mention academic policy. As such, the complexity of acceptable and unacceptable practices of appropriating and copying visual material may become a minefield for graphic design students to navigate, particularly so for inexperienced ones.

Appropriation In Graphic Design

> Designers discussing plagiarism usually distinguish it from homage, appropriation, quotation, or eclecticism. There are no clear boundaries between these modes of use and plagiarism. Judgments are often made not on the basis of the work, but on the basis of the respect one has for the author of the ‘copy’. (Swanson 2003:152)

Postmodernism refers to Western theoretical and creative approaches that dominated during the 1980s, the attitudinal implications of which are still particularly relevant in contemporary design theory and practice. Features of postmodernism include, pluralism and complexity, ‘pastiche’, inclusivity rather than exclusivity, a blurring of boundaries between ‘high’ and ‘low’ culture, embracing of appropriation practices, resistance to universalizing systems and authoritative standards and the challenging of convention and rules (Poynor 2003:11-12). At the height of postmodernism in graphic design a trend of ‘retro design’ and ‘appropriation’ approaches featured strongly, earning this time period the title “the age of plunder” (Poynor 2003:71). Appropriation in the visual arts refers broadly to creative practices where ‘borrowed’ or appropriated elements are used in the creation of a new work (Ṣahlner 2007:1). Issues of ethics and originality of appropriation become contentious, where proponents of appropriation art and design, see it as a legitimate creative and expressive practice, while cynics question it for its lack of ‘originality’ and ‘ethics’ (Ṣahlner 2007:1).

Jameson’s (1983) conception of ‘pastiche’ is useful in providing a theoretical context for this phenomenon, which during the 1980s and still relevant today, undermined previous conventional notions of ‘originality’ and ‘newness’. Jameson (1983:113) describes pastiche and parody as “the imitation or, better still, the mimicry” of styles and approaches. Unlike previous modernist approaches that promoted and pursued the ideals of universality, postmodernism in many ways generated and celebrated multiplicity and heterogeneity, resulting in diverse pluralistic approaches in graphic design practice that defied convention and rules. During modernity where a collective universal ideal was being pursued, art and design ‘voices’ could engage in a conversation, sometimes ‘agreeing’ and other times poking fun or commenting negatively. Jameson (1983:113) refers to as this type of mimicry as parody. Parody relies on a shared sense of understanding, as “there remains somewhere behind all parody the feeling that there is a linguistic [read artistic or design] norm in contrast to which the styles of the great modernists can be mocked” (Jameson 1998:114). In a postmodernist way parody is being superseded by pastiche. As postmodernism’s pluralism displaces the very idea of modern universality (Anderson 1996:6) it becomes increasingly difficult to share a “norm against which a parody can register its comic effect” (Poynor 2003:72). In a way that parody multiplies, yet still connects creative approaches with each other, pastiche multiplies and disconnects. As a result, pastiche exists as a contemporary cultural feature that reproduces and mimics without reference to any 'original’ – thus as “blank parody” (Jameson 1983:114). The modernist conception of originality is deeply affected and “writers and artists of the present day will no longer be able to invent new styles and worlds–they've already been invented; only a limited number of combinations are possible; the most unique ones have been thought of already” (Jameson 1983:115). So, “in a world in which stylistic innovation is no longer possible, all that is left is to imitate dead styles, to speak through the masks and with the voices of the styles in the imaginary museum” (Jameson 1983:115).

Today, the Web, as a vast repository of digital information, alive with infinite possibilities of access, storage, reproduction and alteration, can be implicated in Jameson’s concept of ‘pastiche’. The Web becomes a digital ‘museum’, an easily accessible resource for designers to draw from in absence of a conception of ‘originality’. The difference perhaps from then to now, is that the focus of appropriation is

not so much in a historical sense, as even the boundaries between old and new are starting to dissolve and contemporary visual 'styles' are being extensively re-contextualised and here again 'origin' becomes a non-issue. Allied to this, but in a different way, Saffo (1997:190) highlights "infinite recall" as an important feature of the information age and explains how it affects ideas of creativity and originality in design and explains "Memory gives us context while forgetfulness provides an opening for invention and originality". With infinite recollection of all the visual solutions produced the conventional cycle of stylistic evolution is obstructed and it becomes increasingly difficult to generate anything 'new' or different in design. In the absence of digital infinite recall, graphic designers have the ability to draw from imprecise memories and reconstitute and 'invent' different visual solutions to what is already evident and 'known', in contrast to contemporary digital practices of replication and sampling. In the multiplicitous digital space of the Web, the maze-like connections between 'original' and infinite 'perfect' digital replications and permutations, it is easy to see how the notion of originality can be undermined. Jameson concept of pastiche and Saffo's infinite recall raises questions regarding the viability of originality as a concept. Although, for students the question may not be always be academic or theoretical in nature, in the everyday regenerative pluralistic environment of infinite digital remembering, 'creativity' may be conceived of as merely an act of assembling and reassembling what has gone before in 'new' ways, rather than intending to be 'original'.

Terms relating to Plagiarism and Appropriation in Graphic Design

> Design is also usually about clear communication and thus it dwells primarily in the realm of the cultural norm. Every metaphor, cliché, and standard phrase had an original author. At some point each becomes "part of the language" and the original author need not be acknowledged. How do you sort out what is quotation and what is just plain talking? (Swanson, 2003:153)

Appropriation featured in many well-known and professional designers work, particularly during the 1980s and as a result much debate has ensued regarding whether these approaches constitute plagiarism or legitimate creative practice. A particularly well-known example is a Swatch watch poster (1986) designed by Paula Scher that appropriated a Swiss travel poster (1934) by Herbert Matter. Here we can see that although there are differences in the two posters, there are too many similarities for it to be coincidental. This example has been used in many discussions regarding plagiarism, however Scher did have permission from Matter's widow to use the image, paid royalty for the use of the form and credited the poster as "Koppel & Scher with Herbert Matter" (Scher 2002:97). Scher's design had an explicit link with the original, she comments that she admired Matters work and had his Swiss travel posters hanging on the walls of the office, and she terms the work as a "parody campaign" (Scher 2002:97).

With this example in mind, parody can be described as mimicking or borrowing closely from a source where the link to the source is overt and the intent is to reveal the source. Following Poynor (2003:71), parody can reveal the source either in comical and disparaging way or be sincere and respectful. Accordingly, two categories of parody can be distinguished, namely satire and homage. In light of this, Scher's design for Swatch can be considered as a form of homage. Contrastingly, an example of satirical parody can be found in the imitation of South African Breweries' (SAB) Carling Black Label beer brand by Justin Nurse from Laugh it Off. Here Laugh it Off mimics the Black Label logo mark and places it on a T-shirt design, however the text 'Black Label' is replaced by 'Black Labour' and 'Carling Beer' by 'White Guilt' as a way of commenting on contemporary cultural issues in South Africa. Interestingly, SAB sued Laugh it off "on the basis of trademark dilution by tarnishment" but lost the case (Rengecas 2005). The design relies on the link to be made back to the original to have its desired effect and intent to mock is patent, accordingly this can be considered as satirical parody.

An example of pastiche can be found in the cover design by designer Barney Bubbles (Colin Fulcher) for the album Armed Forces by Elvis Costello and the Attractions. The design, comprising of multiple flaps that can be reconfigured by the viewer in various ways, is described as "a riotous mélange of art historical allusions to Mondrian, Abstract Expressionism, Op Art and Pop, fronted by a painting of a herd of elephants in a kitsch popular style" (Poynor 2003:73). This designer's work does not rely on the viewer recognising the sources it was appropriated from for it to have its desired effect. Neither does the designer set out to conceal the link by reconfiguring or transforming the source material into something completely 'new' and 'original' necessarily. The design functions as the sum of its parts. Accordingly, the design is an example of pastiche – it does not rely on a connection with the source material for the viewer to appreciate it and essentially there is no intention to comment negatively or positively on the source material that is mimicked or copied. This category is contentious due to the

fact that intent to comment on the source does not assert itself in a clear way and the link to the source material is 'broken' which can be (mis)interpreted as an intent to conceal the link (cheat). The creative integrity of this approach then often relies on how similar the final design is to its source and/or the integrity and professional standing of the designer (Swanson 2003:152).

The term plagiarism can be distinguished from the terms that have been discussed so far, in that plagiarism's intention is to conceal its source material. This is in contrast to pastiche, where there is no intent evident, neither to conceal or to reveal, and to parody, where there is a definite intent to reveal the source material. Designers who plagiarise deliberately set out to copy other solutions and ideas as a shortcut approach, hoping that no one will ever know that the idea or visual was not theirs. An important further differentiation can be made where plagiarism occurs as a result of inexperience. In the case of an inexperienced student designer the source may be inadvertently concealed in the final product, but may be evident in the process work. Designers use source material as inspiration and it is possible for a 'new' designer who is not yet capable of engaging with the creative design process adequately, nor able to necessarily use the conceptual and theoretical techniques of appropriation successfully, to inappropriately copy the source material closely in the final solution. Although this type of plagiarism cannot be condoned, it should perhaps be dealt with in a pre-emptive or remedial rather than punitive manner. Finally, still under the banner of plagiarism, 'accident' and 'coincidence' can be differentiated. Accidental Plagiarism (or Cryptoamnesia) occurs as a hidden, unacknowledged memory that emerges as inspiration without any conscious knowledge of the original. Bierut (2006) in an Internet article entitled 'I Am a Plagiarist' describes this experience:

> Did I think of it consciously when I designed my poster?... I saw something, stored it in my memory, forgot where it came from, and pulled it out later — much later — when I needed it. Unlike some plagiarists, I didn't make changes to cover my tracks.

Here Bierut clearly acknowledges his intent as not to conceal the source, as he had no conscious knowledge of it. Similarly, coincidental plagiarism can occur when a design piece seems as if it was plagiarised due to the fact that it is exceptionally similar to another work. It is possible that different people can come up with similar design solutions and in true postmodern fashion it can be asserted that nothing is new. Blythman (in Crace 2007) comments: "there's little, if anything, that can be genuinely said to be new" and "[a]ny time I do something original, I understand I just haven't found the person who did it first". Accidental and coincidental plagiarism becomes highly problematic, as these are 'easy' defences for any accused plagiarist and very difficult to prove or disprove, as mentioned earlier.

Conclusion

As part of an ongoing discussion, some closing recommendations can be made, certainly none cast in stone or coming from a position of authority:

- Policy documents for art and design disciplines are necessary to cater for the specific needs of the different visual disciplines.
- Lectures on visual plagiarism and appropriation theory are important to provide a framework for students to contextualize their own practice.
- Visual referencing systems should be introduced in studio practice in order to provide methods for students to indicate source material in process work and final submissions.
- As part of assessment practices, process work should be emphasized as a way of highlighting the student designer's role in developing visual solutions.

The concept of plagiarism in the creative arts is complex and although one can attempt to differentiate between what is 'appropriate' and 'inappropriate' there are still many grey areas and much to debate. It is apparent that the digital information age, where the concept and technical facilities of reproduction is deeply embedded, together with postmodernist theoretical conceptions of appropriation, have significantly altered creative and cultural perceptions and approaches with regards to what constitutes legitimate and illegitimate copying of information, including visual information. Inspiration and source material are undoubtedly part of the design process and "ideas come from many sources: they recur, regenerate, take new forms, and mutate into alternative forms" (Drenttel 2005). Similarly, it is important for design students to be able to assimilate source material as part of their learning process, and to appreciate the interconnected context within which they operate visually. However, when source material becomes the solution and the design process is sidestepped, the integrity of creative practice and with it, objectives of imagination, innovation and originality, are put into question. As has

been discussed in this paper, the differences between what constitutes plagiarism and legitimate appropriation can take on many different forms – pastiche, parody, homage, satirical parody, plagiarism, accidental plagiarism and coincidental plagiarism. Within these copy practices, it seems that there are many instances where it may become problematic to determine whether the designer's intent is to conceal the source material (cheat) or, in a postmodern way where the idea of an original is being put into question, to not comment on the source material whatsoever (pastiche). In addition where there are unconscious copy processes or where similarities are simply happenstance, intent cannot even be factored into the equation. Moreover, even though it may be possible to 'classify' visual plagiarism and provide terms and descriptions for various approaches in theory, it becomes significantly more difficult to ascertain intent in a practical sense and thus apply this theory in reality. So, while in practice generalisations are problematic and decisions can perhaps only be made on a case-by-case basis, there is much value in gaining a better theoretical understanding of how culture and theory affects appropriation and plagiarism in the graphic design education setting. Here, considerable research is still required to contextualize the subject of visual plagiarism in order that comprehensive and appropriate policy documents can be developed and perhaps more importantly, the concept can be appropriately managed for students as part of teaching and learning processes.

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Short Biography

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A ROLE FOR INFORMATION ARCHITECTURE IN DESIGN EDUCATION: CONCEPTUALISING INDETERMINATE PROBLEMS IN DESIGN THINKING

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Abstract

When faced with complex problems that are situated in social reality many design students struggle to formulate meaningful and articulate responses to these problems. The cognitive skills required to solve complex problems are often learned only experientially. This paper argues for these latent, yet critical abilities, to be taught explicitly as part of a tertiary design education. This paper initially reviews the theoretical underpinnings of design thinking with a specific focus on the reciprocal relationship of the design problem and the subsequent solution. A range of the formative cognitive requirements needed to solve complex problems situated in broader society and within disciplinary practice are described in reference to the theoretical framework. In the subsequent sections of the essay, approaches to solving design problems are discussed particularly in reference to the theory of cyberdesign. In the concluding section of the paper the authors argue that the theory of cyberdesign may in a practical visual form be used as a tool for the development and representation of cognitive decisions while constructing meaningful design responses to complex problems.

Key Words: *design cognition, complexity, social and institutional reality, cyberdesign, problem solving*

Conceptualising complexity in design education

This paper arises from our reflections gained over the last three years, teaching a user-experience design (UX) course to third- year interactive design students at the University of Johannesburg. During the UX course, students are presented with a problem that for the first time in their studies sits originates from outside their discipline of practice, in the broader world.[1] In our experience, design students when faced with high-level complexities of a problem framed outside the disciplinary practice are not sufficiently cognitively equipped to construct meaningful design solutions. These thinking skills that include problem analysis and framing as well as the construction and scope of reciprocal solutions are often only latently taught. Our contention, described in the remainder of this paper, is that design is foremost about the kind of activities listed above and as such the abilities required to assess and respond to complex problems should be an explicit aspect of design education.

Design thinking (DT) has come to be recognised as the umbrella term for systemic, transdisciplinary cognitive approaches to solving complex design problems empathetically, effectively and creatively. Design thinking as a field of academic study consists of a considerable body of work developed over the last forty years by a diverse range of scholars. However due to DT's ability to stimulate innovative problem solving, it has attracted considerable attention from the business world (Lockwood 2010: xii) over the last few years. Design companies such as IDEO have presented design thinking to the business world as a methodology that could be procedurally practiced (Nussbaum 2011 [o]). The result of this positioning is that DT is highly prominent as a creative approach to business strategy but, beyond sexy flowcharts and description of activities, steps and methodological structures, the details of the actual thinking skills required to practice DT are sketchy at best, hidden behind each design company's intellectual capital and professional know-how (see Figure 1).

Beyond the commoditisation of design thinking as an approach to innovative business practice, the Design thinking philosophy provides numerous approaches to conceptualising and responding to

[1] An example of the kind of problem we are referring to would be our 2010 design problem: How can we as designers encourage customer usage of the Rea vaya (BRT) transport system in Johannesburg?

complexity. In order to reclaim DT for the design world, we feel it is necessary to return to the academy in order to review a selection of the formative and contemporary theoretical accounts of DT that address the nature of the complexity facing practitioners in the field of design and begin to explicitly identify the enabling cognitive requirements needed to solve design problems that exist in complex systems. Complexity can be said to occur within a system when the system's elements and structures cannot be simulated nor easily predicated and thus present unexpected and unanticipated behaviour (Rosen, in Resmini & Rosati 2011: 61).

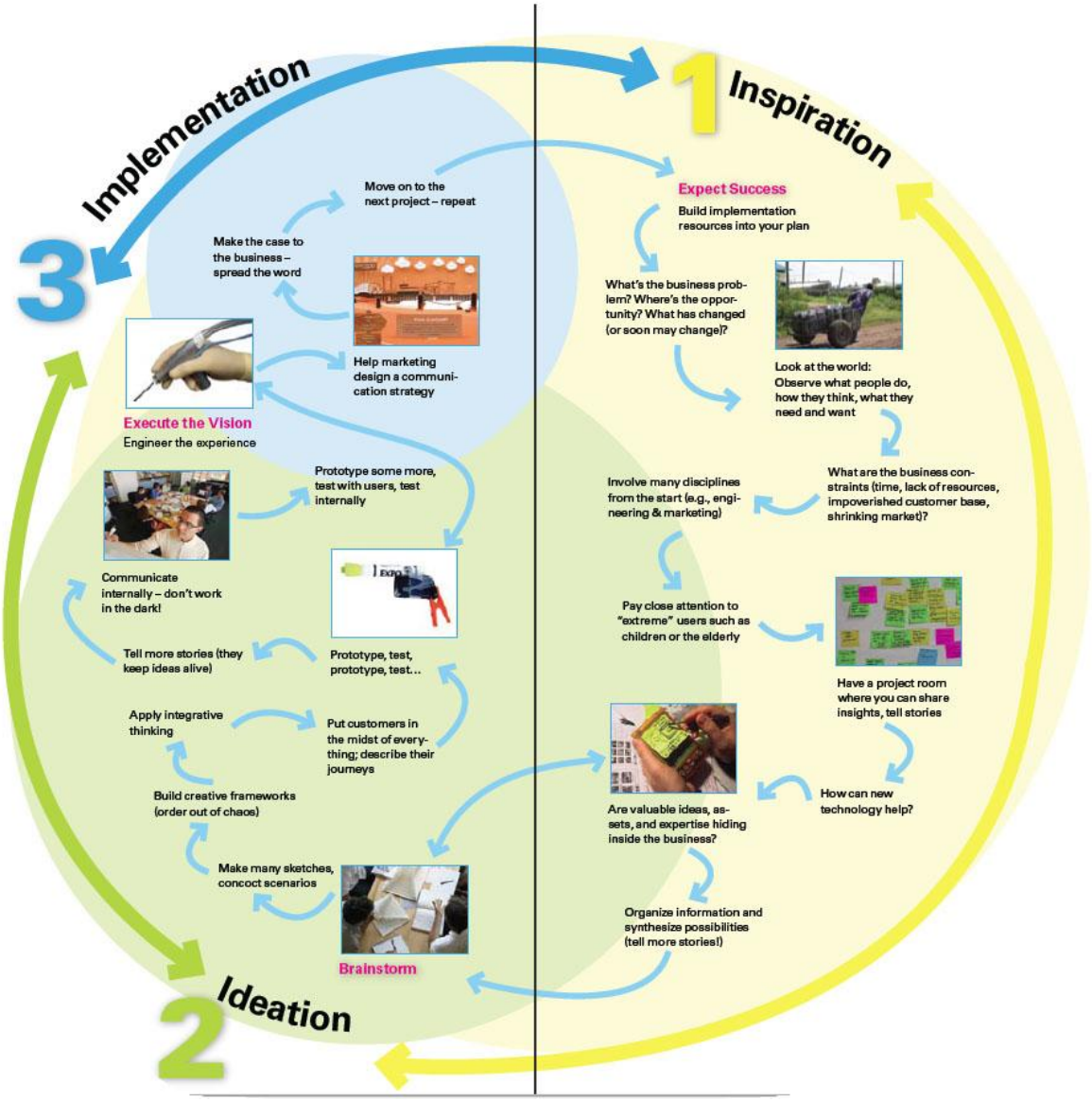

Figure 1: Tim Brown's *IDEO Design Thinking* diagram

Numerous models representing the philosophical and cognitive approaches described as DT can be found in various fields of design practice with perhaps the most famous example that of Tim Brown's *IDEO Design Thinking* diagram (Brown 2008: 88-89). In the IDEO diagram cognitive aspects of design are described under catch phrases such as 'Build creative frame works (order out of chaos)', 'apply integrative thinking' and 'prototype, test'. Many of these catch phrases imply cognitive abilities that are developed through years of experience and practice. Of course the IDEO diagram is only a representation of the intellectual capital that the company applies in its design practice but due to the fact that IDEO is a business, their modes of practice are their trade secrets.

Neil Brown (2000) points out that in reality there can be no functional separation between design practice and the cultural consumption of design. Therefore, we position the practice of design thinking as occurring in the two intertwined systems of social reality and that of institutional design practice

Approaching complexity as social reality

Horst Rittel and Melvin Webber's formative discussion on the nature of indeterminacy and problems in their iconic publication *Dilemmas in a General Theory of Planning* (1973) establishes the design thinking approach for accounting for the hyper-complexity of social reality by delimiting the area of contextual relevancy through the positioning of the design problem.
In the previous hundred years, design problems had been assessed in terms of functionality and efficiency (Rittel & Webber 1973: 156) and human beings were expected to organise their lives around the 'developing' modern world[2]. *Dilemmas in a General Theory of Planning,* discusses the authors' contentions that the growing consequences of public opinion and public acceptance has just as much influence on the success of a design as the design's functional requirements (Rittel & Webber 1973: 156). Rittel and Webber *(*1973: 159) describe the complexity of solving design problems as a socially relevant matter:

> "We have been learning to see social processes as the links tying up open systems into large and interconnected network of systems, such that outputs of one become inputs of another. In that structural framework it has become less apparent where problem centre's lie, and less apparent where and how we should intervene even if we know what aims we seek"

Design problems that had been viewed as technical were then considered to be ill defined, reliant on subjective social agreement and *wicked* in the sense that before they could be solved they needed to be tamed, defined and limited.

Rittel and Webber emphasise the mutual relationship shared between design problems and design solutions and they state that the process of identifying, understanding and forming the problem is a prerequisite for solving the problem, that is to say *the formulation of a wicked problem is the solution* (1973: 161).

Rittel and Webber further describe the nature of the problems that designers seek to solve as elusive as what can appear to be the problem may actually be a result of a different problem at a higher level (1973: 165). For example, a spiralling inner city crime problem may be the result of a legacy of poor schooling in the area.

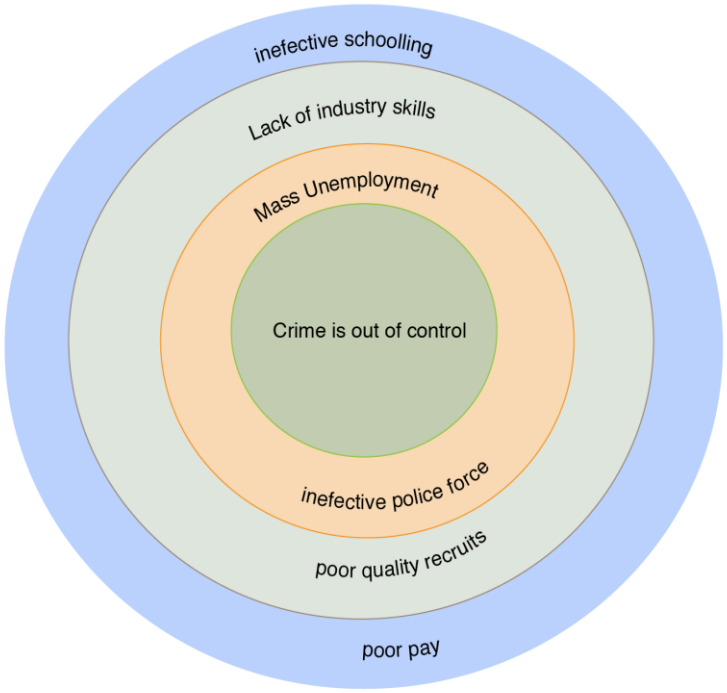

Figure 2: An illustration of a hypothetical example of the various levels of a problem, showing two different approaches to the scoping of the problem.

[2] Terry Smith, gives an excellent account of the impact of modernism on American Society in *Making the Modern: Industry, Art, and Design in America*. University of Chicago Press

According to Rittel and Webber the direct impact of the concept of ill- defined problems on design practice is that each design problem is complex and original (1973: 164), as each problem, even those similar in nature on the surface, would be solved with reference to a specific positioning, in a specific culture, in relation to specific goals. Therefore 'wicked' problems have any number of potential solutions and many different possible solutions (1973: 161). Consequently, as each design problem is unique and has its own contexts, there can be no prefabricated solutions to solving design problems.

To begin to solve wicked problems requires the following general cognitive understandings:

- That design problems are social phenomena and that problems and solutions exist in relationship to social reality
- The role that the formation of the problem plays as the essential structuring agent in the cognitive decision making process.
- The ability to conceptualise problems as systemic, that at different levels problems may appear to warrant different solutions and that a solution at one level may yield a problem at a different level.
- That each design problem is complex and original and subsequently there can be no prefabricated solutions to solving design problems

Approaching institutional complexity

As important as problem framing is, design is ultimately concerned with finding solutions to the problems that have been recognised. Nigel Cross (2006:78, 80) explores the co-dependency of the problem and solution in design. Expanding on the notion that the problem defines the solution introduced by Webber and Rittel, Cross (2006: 78) states that problems are cognitively defined by designers, in relation to solutions. Designers tend to solve problems by testing the problem against solutions leading to a greater understanding of the problem, the recognition of new problems and the amendment, acceptance or discarding of parts of the solution. The co- dependency of problems with design solutions introduces and allows for the natural bias of the designer's identity, personal aspirations and world experience as well as that of the design discipline to permeate the design process.

Balancing the need to solve societal problems whilst utilising validated institutional knowledge and approaches is a decision making process that has its own dilemmas. In *Wicked Problems* (1992), Richard Buchanan emphasises the importance of approaching design problems and solution pairings in an iterative, systemic and interdisciplinary manner due to their indeterminate nature, thus negating the temptations of applying assumptive design solutions (1992:10).

A *category* according to Buchanan can be considered the collective descriptive facets and encompassing rules that define the characteristics of a design object that designers commonly default to when solving design problems. Hypothetically, if the design problem is the need to communication to a wide audience, a graphic designer would traditionally apply a *built in* discipline solution such as a poster. Primarily, the quality of the solution was assessed in reference to the discipline's concept and conventions of the category: *Poster*. Buchannan questions the designer who relies on the predetermined design solutions, describing the repercussions of a categorical approach to design as '*mannered imitations of an earlier invention that are no longer relevant to the discovery of specific possibilities in a new situation*' (1992:12). Applying *categories* of design automatically in response to design problems, without a rigorous investigation into the nature of the problem, implies that design problems are consistently alike. In addition an over reliance on design categories can embed institutionalised conventions of practice that may be context invalid, for example, cars as the solution to the problem of mass transport. The integration of *categories* in the design disciplines is so ingrained that often the fields themselves are misrecognised for the sum of their practice based outputs, as opposed to the cognitive process that informs the 'making'[3]. Cross (2006: 82) in his description of the 'fixation' effect describes a similar phenomenon that limits particularly inexperienced designers to "*reuse features of existing designs rather than explore the problem and generate new features*"

[3] Example web- site design, music video design, typography etc.

The over reliance on approaching design education from the point of *categories* is exemplified in countless university briefs that present already considered answers to design problems by stipulating which product category the envisioned design solution should take. The student designer only has to then incrementally change the category. For example, a brief requiring a student to design a website for an imagined business makes an assumption that the media type 'website' is the correct solution to the design problem. The problem is partially solved as a number of strategic decisions have already been defined by the brief writer. The problem is rendered un- complex and the student only has to focus on functionality and appearance.

The crux of Buchannan's (1992:12) thinking is that the conceptualisation of design practice is fundamentally flawed. Rather than a collection of different fields of practice that have their own built in product solutions, design is a field of practice within which, the fundamental activity is the conceptualisation and development of solutions purely in response to the context of the particular problem at hand. Therefore the subject, scope and the possible design approaches utilised in the formation of the problem and solution are directly related to the circumstances and placements of the problem.

Buchanan (1992:9) suggests that in order to avoid prefabricated, non-innovative solutions, design problems can be resolved by continuous recontextualisation of the design problem and solutions, under a number of cognitive approaches he refers to as *placements*. The four placements described by Buchanan are:

- ***Symbolic and visual communications*** that broadly address the problems of communicating information, ideas and arguments through the synthesis of words and images. Examples of this field include typography, graphic design, information design and film
- ***Design of material objects*** that address the problems of form and visual appearance of products through diverse interpretations of the physical, psychological, social and cultural relationships between products and users
- ***Design of activities and organized services***. The central themes of this placement are the connections in everyday experiences and the consequences of these connections on the structure of action. An example of this placement would be the layout and organisation of supermarket.
- ***Design of complex systems or environments for living, working, playing, and learning***. This placement addresses the role of design in sustaining, developing and integrating people into broader ecological and cultural environments, shaping these environments when desirable or possible and adapting to them when necessary

Two critical points underpin the theory of *placements.* Firstly, design problems should be assessed within reference to each *placement* category. For example, how the solution will symbolically communicate and function as a product, behave and interact with the user, exist and operate within a system/s and with reference to a variety of environments.

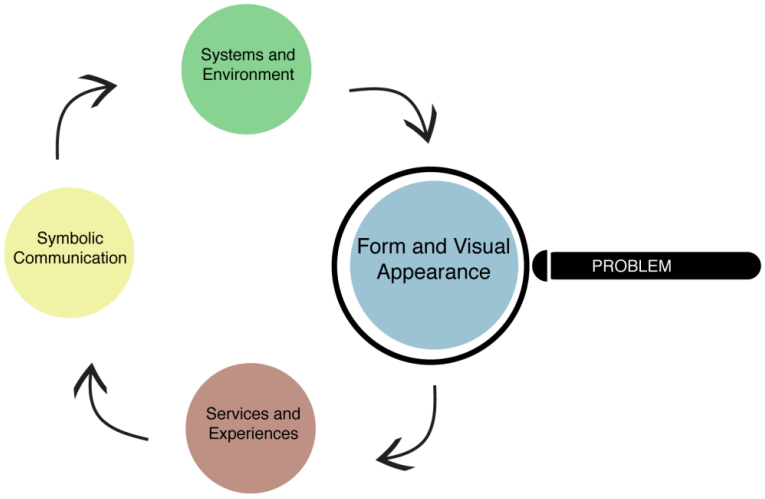

Figure 3: An illustration of showing the different placement 'lenses' that can be used iteratively to assess solutions

Secondly, that the *placements* collectively share a systemic iterative relationship (Buchanan 1992:10) to each other in an ecological system. Within this homeostatic environment, a change within one *placement* of the design will have a ripple affect requiring a reconsideration of the other *placements*, which in turn may result in a return and re-edit of the initial *placement*. "Innovation" according to Buchanan "comes when the initial selection is repositioned at another point in the framework, raising new questions and ideas" (Buchanan 1992:12).

Johann van der Merwe[4] in a *Natural Death is Announced* (2010:1), summarises Buchanan's view of design as *placement- led*, describing design as a discipline- neutral groundless field of knowledge that constantly sources knowledge, skills, practices and contexts from other fields of knowledge as dictated by location of *the 'specific design problem'* (2010:3). Design, van der Merwe suggests is therefore a field of practice that is inherently transdisciplinarian in nature as each design problem is situated within its own constructed discipline that is uniquely different to any other constructed discipline.

To structure responses to design problems at an institutional level requires:

- A solution or range of solutions for the designer to measure the problem against
- An understanding that design practice is problem- led not product- led
- The conceptualisation and development of solutions is purely in response to the context of the particular problem at hand
- The continuous re- contextualization of design problems and solutions in reference to the four areas of design cognition in an iterative and systematic manner
- The ability to construct a unique discipline of practice informed and contextualised by the design problem

Responding to indeterminate problems

Van der Merwe (2010:3) proposes that in order to cognitively account for the complexities of social and institutional reality aspects of systems theory and cybernetics could be implemented as a unified system in a constructivist design paradigm, which he terms *Cyberdesign*.

Systems thinking[5] is an umbrella term for the study of how individual activities, occurrences and phenomenon relate to and affect the environments that they inhabit and are in turn affected by these environments (Schmitt 2006: 23). Systems thinking supports a design process that is the antithesis of analytical enquiry as it is expansionist in nature, constantly widening the focus of the understanding of the problem (Schmitt 2006: 24). Cybernetics shares many similarities with system thinking, most notably that they are both systems of control that over time become concerned with social systems of reality (van der Merwe 2010:3). While systemic thinking focuses on the generic characteristics of all systems, such as the connected relationships between elements, to each other and within the system, cybernetics can be understood to be about the purposeful achievement of specific goals within a system (Pangaro 2011 [o]). Although cybernetics is thus teleological in aspiration, it has a strong focus on how the goal is achieved. Practitioners of cybernetics use models of organizations, feedback, goals, and conversation to understand the capacity and limits of any technological, biological, or social system. Van der Merwe (2010:3) believes cybernetics to be a crucial aspect of approaching indeterminacy as it is discipline neutral or absorbent and can be applied to multiple contexts.

Cyberdesign theoretically supports the cognitive requirements needed to resolve design problems while dealing with the complexity of the two interwoven systems of institutional reality.

- Firstly, cyberdesign recognises reality as a uniquely constructed discourse and therefore acknowledges the nature of problems as social phenomena contextualised by the reality of the particular problem.
- Cyberdesign conceptualises problems as systemic and because of its expansionist nature of enquiry allows for problems to be understood at different levels.

[4] Professor Johann van der Merwe is the Head of Department: Design and Informatics at the Cape Peninsula University of Technology

[5] Systems *theory* is specialised transdisciplinary field of systems thinking that aims to investigates the general principles of systems and secondly, provides models which can be used to describe the principles (Heylighen & Joslyn: 1992 [0]). However in this essay we will use the term *systems thinking* to bracket both terms.

- Van der Merwe (2010:3) describes the flexibility of cybernetics as appreciative of "*the necessity of selecting from a wide range of approaches, plus a range of tools and corresponding methods, that best fit—the type of system, the purpose and nature of the inquiry, and the specific problem situation*". Cyberdesign therefore allows for solutions to emerge in context to the problem rather then prescribing product led solutions.

Interestingly though, Van der Merwe limits cyberdesign to an academic study of design phenomena (2010:4). Perhaps this is due to the difficulties that the repurposing of design education as the systemic enquiry and conceptualisation of design problems would present design curricula because of the lack of a straightforward procedural structure (Brown 2002).

We propose that cyberdesign could be incorporated into design education in an explicit, visual manner to introduce aspects of design cognition to novice designers. The visual models that are aspects of cybernetics and systems design can be used according to (Heylighen & Joslyn 1992) to describe the principles they represent. Hence the models of cyberdesign could be applied to represent cognitive approaches or techniques to problem solving on a Meta level as well as during actual design problem solving. In this sense learning how to use and or develop the visual model would encompass the formal and applied learning of the cognitive acts embedded in the model. To develop cyberdesign as an explicit, visual approach to solving indeterminacy would rely on a number of factors such as analysis of required cognitive skills, selection of models that embed the respective cognitive skills and design of learning activities that support the transfer of the cognitive principles through the use of the visual models.

However beyond the requirements needed for solving indeterminate problems described earlier, developing cyberdesign as a collection of visual models that variously represent aspects of design cognition could be potentially advantageous for a number of other reasons.

Firstly, the visual models while systems in their own right could be applied within a larger teleological design system in relation to other visual models. Therefore the act of arrangement would in essence be a creative one as opposed to a rigid method or structure and thus as a flexible methodological procedure would tend according to Fricke (in Cross 2006: 87) to produce meaningful solutions.

Secondly, the model instead of representing only the thinking behind the process could in many cases particularly in the fields of interaction design, wayfinding and information design, can be the actual design solution albeit at a low- fidelity prototype stage. The cyberdesign model would in many cases evolve into the end solution.

Thirdly, by utilizing visual models that embed the theory of cyberdesign, the '*reflective conversation'* (Schon and Wiggins in Cross 2006: 85) embedded in the activities of sketching could emerge.

To conclude, designers are often faced with solving problems that are not always easily definable. Many of these thinking skills are not taught explicitly but are learned experientially. This paper argues for these latent yet critical abilities should be taught explicitly as part of a tertiary design education as students often struggle to develop meaningful solutions when faced with indeterminate problems. A critical aspect of these complex problems is the framing of the problem in relationship to broader social culture. In design an understanding of the problem can be said to directly impact the solution of the problem. As designers tend to solve problems by applying types of design solutions to problems, the cognitive act of constructing design solutions within the discipline critically impacts on the construction of meaning.

This paper advocates a discipline neutral systemic placement led cognitive approach to solving design problems over a categorical product orientated approach. Cyberdesign is presented as a theoretical approach to solving indeterminate problems that exist in relation to societal and disciplinary complexity. In light of these positions this paper argues that an explicit representation of cyberdesign in the form of visual models could potentially support the learning of the cognitive requirements needed for solving complex design problems

Acknowledgements

The authors wish to thank and acknowledge the Information Architecture Institute for their support.

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Short Biography

Terence Fenn has worked in the Department of Multimedia since January 2003. He is responsible for the interactive design and research orientated components of the multimedia programme. Originally trained as a fine artist, in 2001 Terence was awarded an Aus-Aid Nelson Mandela Scholarship to study a Master of Art and Design Education at the University of New South Wales in Sydney. Terence is currently the coordinator of the Multimedia Department's BTech programme. His primary area of interest is the role that design can play as an agent of support and positive change in the lives of people.

Jason Hobbs has been practising information architecture and user experience design since 1997. He pioneered the user journey design method and is internationally recognised in his field. For the past six years jh-01 / Human Experience Design has been one of the few truly beautique and independent user experience (UX) design companies in South Africa. The services offered include user-centered research and testing, strategy and design. Jason is an Affiliated Researcher at the University of Johannesburg's Research Centre Visual Identities in Art and Design. He is presently a part-time lecturer at the same university. He regularly presents at International conferences and actively works to grow the local community of practice through the SA UX Forum which he founded five years ago.

A ROLE FOR INFORMATION ARCHITECTURE IN DESIGN EDUCATION: DEVELOPING INNOVATION THROUGH STRUCTURED THINKING

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Abstract

In this paper, we position information architecture design and the thinking skills required for its practice as a practical application of the theory of cyberdesign. We further suggest that these thinking skills, while commonly applied to digital domains, transcend the digital because, at the cognitive level, the information architect is dealing, first and foremost with indeterminate problems. We describe how information architecture design involves the process of deconstructing dysfunctional formations (problems) and the characteristics of the design applied in the reformulation of parts into a functional reformulation. The innovation produced through the reformulation of the problem (solutioning) is positioned as an act of composition, where new meanings are created, and the implications of innovation for users (and the design) are then discussed. In conclusion, we hope to have demonstrated that these thinking skills are a meaningful area of further study for their application as teaching techniques to develop in students the necessary abilities required for solving indeterminate problems that they will be required to engage with in their careers as designers.

Key Words: *information architecture design, indeterminacy, innovation*

Information architecture and cyberdesign

The term information architecture (and information architecture design) is being used in this paper in the sense first outlined by Richard Saul Wurman in his book 'Information Architects' where he described an information architect as *"…someone who enables data to be transformed into understandable information."* (1997) In his book, Wurman uses the term to cover the design of information across a variety of media (predominantly print) where the practices of information architecture and information design overlap greatly.

The term, and the practice of information architecture (IA), has developed substantially with later texts such as 'Information Architecture for the World Wide Web' which emerged from the growing need for a set of skills that relate directly to design in information spaces of a digital nature including but not limited to websites, software and mobile applications. In these environments, information architecture design is specifically positioned to address challenges user's face in their experience of the interfaces that mediate their consumption of and interaction with large bodies of information in databases, on servers and embedded in mark-up (like webpages) most often in hypertextual ('linked') environments like the World Wide Web or the Internet itself.

It is probably fair to say that today the term has come to be most closely related to design in and for digital environments, within the larger umbrella practice of user experience design[1], because of the proliferation of the Web and the devices, technology and infrastructure that have become accessible to so many. As a practice, information architecture design has also grown so substantially because of the need for those skills in solving indeterminate design problems[2] that proliferate in the digital domain.

[1] The term 'information architecture' is still associated with print media in information design communities of practice and is also applied in the fields of IT and Application Architecture however for a different role, practise and set of skills. Our use of the term does not span these disciplines.

[2] Indeterminate, complex or wicked problems are understood in this paper to refer to problems that have multiple stakeholders and multiple users (people who experience the problem as part of their attempt at goal achievement), large amounts of data related to the system where the same system lacks predictability.

IA shares with cyberdesign[3] a view of problems as systemic and being rooted in social realities. And again, as with cyberdesign, IA is goal driven and applies models of organisation, feedback and conversation to understand and explore the system in which the problem exists.

Van der Merwe (2009:3) describes the flexibility of cybernetics as appreciative of "*the necessity of selecting from a wide range of approaches, plus a range of tools and corresponding methods, that best fit—the type of system, the purpose and nature of the inquiry, and the specific problem situation*". In the case of IA, the approaches, techniques and tools that have developed, have largely emerged for the purposes of solving problems in the digital realm. The wide range of specific techniques utilized by IA practitioners to address indeterminate problems include (but are not limited to): complex system design; user needs analysis and representation; organisational systems and schemes design; ambiguity studies; content analysis and labelling; building of context; designing for flexibility; strategic thinking; design of relationships; conceptual and journey models and scenarios. The various techniques assist at various stages of the design process: some assist with information or data gathering, questioning the boundaries of the problem; some assist with understanding the problem from the perspective of multiple audiences and owners; some assist in the early stages of conceptualizing a solution and some with testing these solutions in one or more environments with one or more type of user; some assist with unifying the disparate needs of the multiple stakeholders of the problem.

These techniques form part of a design process and surround the core act of information architecture design itself. To date, the experience of the authors has been in the teaching of these techniques, however our experience has shown that it is the ability to think and create in the specific manner of the design of information architecture that has been lacking in our students and teaching.

The characteristics of structured thinking

In the novel *A Tale of Love and Darkness* by Amos Oz (2005) a young boy (the narrator) has recently been granted a small space for the placement of his books alongside his father's in their personal library. The boy has chosen to arrange his books by height, much to the dismay of his academically inclined father:

> "At the end of the silence Father began talking, and in the space of twenty minutes he revealed to me the facts of life. He held nothing back. He initiated me into the deepest secrets of the Librarians lore: he laid bare the main highway as well as the forest tracks, dizzying prospects of variations, nuances, fantasies, exotic avenues, daring schemes, and even eccentric whims. Books can be arranged by subject, by alphabetic order of author's names, by series or publishers, in chronological order, by languages, by topics, by areas and fields or even by place of publication. There are so many different ways" (Oz 2005: 24)

To library scientists and information architects reading this passage, Oz's description is a merely romantic and unspectacular look at what can be achieved when one categorises books using their meta-data.

What is more interesting are the lines which follow immediately on from this:

> "And so I learnt the secret of diversity. Life is made up of different avenues. Everything can happen in one of several ways, according to different musical scores and parallel logics. Each of these parallel logics is consistent and coherent in its own terms, perfect in itself, indifferent to all the others… So I learnt from books the art of composition" (Oz 2005: 24)

It is here that Oz uses the organizing of books on a shelf as a metaphor for both the many views, understandings and choices we have and make that become our lives ("*the facts of life*"), and design or art making ("*composition*").

A minor edit of Oz's latter paragraph starts to read a little like a description of the way people can navigate websites and the effort that information architects take to relationally structure navigation, to

[3] Cyberdesign, is a term coined by Professor Johan van Der Merwe, describes a theoretical field of design thinking that applies aspects of systems theory and cybernetics with in a constructivist design paradigm.

hyperlink data, in ways that provide multiple options for journeying through a single structured logic of associations:

> "made up of different avenues…[e]verything can happen in one of several ways…parallel logics...[e]ach … consistent and coherent in its own terms, perfect in itself, indifferent to all the others…"

Alternatively we can think of this as a description of people's path to the creation and discovery of their own personal meanings, views of the world and interpretations of reality. Viewed as an act of composition, much of what we take for granted (and often as fact) that has been through a process of structuring, categorization or association, informs our understanding of the world. This should not be confused with knowledge. One simple example would be the Genus of Species. Our understanding of the animal kingdom would be very different today had an alternative categorisation been applied.

The process of structuring, categorising and association (the fundamental characteristics of information architecture design) is a creative one: where once a dysfunctional formation existed (multiple disparate data sources without any over-arching, coherent sense of logic, structure or harmony), the designer will have manifested structure, categorisations and associations that create new form and meaning for its audiences. The designer will create a new functional formation. Multiple, disparate and large quantities of data and multiple audiences of the solution (including various stakeholders, various types of end users and all those responsible for engineering the final solution in which the information architecture will be manifested: graphic designers, programmers, etc) are common characteristics of the kinds of wicked problems encountered by information architects in day-to-day work.

By way of analogy, Venn diagrams are useful for describing the construction of form and meaning (and meaning through form) through structure, categories and associations:

> "…[the] principle of these diagrams is that classes [or sets] be represented by regions in such relation to one another that all the possible logical relations of these classes can be indicated in the same diagram. That is, the diagram initially leaves room for any possible relation of the classes, and the actual or given relation, can then be specified by indicating that some particular region is null or is not-null". (Lewis & Leibniz 2010:157).

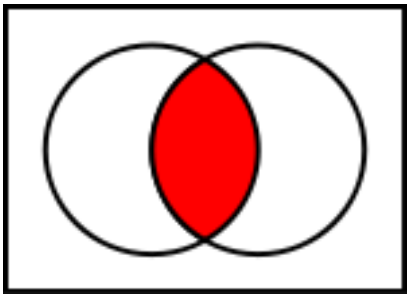

Figure 1: A basic Venn Diagram of two sets

Notwithstanding the key point that '*any possible relation'* may be applied, Venn Diagrams do however contain rules for their use. There is a particular form that is required as more sets are added and because of this there are logically inherent 'rules' or relationships governing the associations made between data sets.

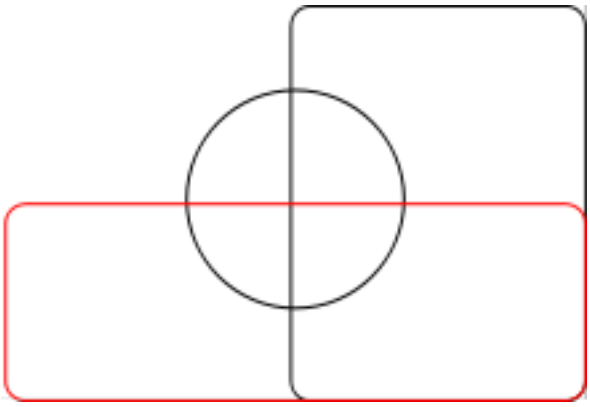

Figure 2: Edwards-Venn diagram for 3 sets **(Tanhuanpää 2006)**

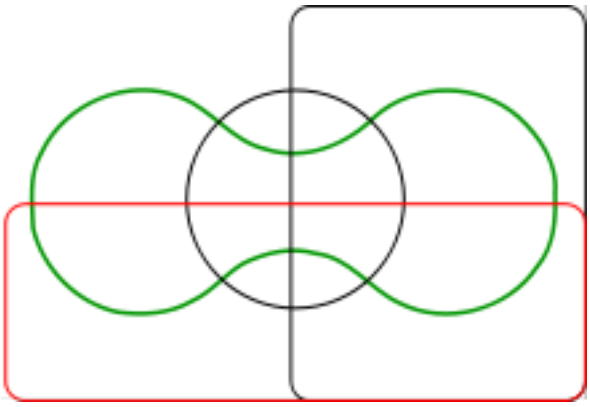

Figure 3: Edwards-Venn diagram for 4 sets **(Tanhuanpää 2006)**

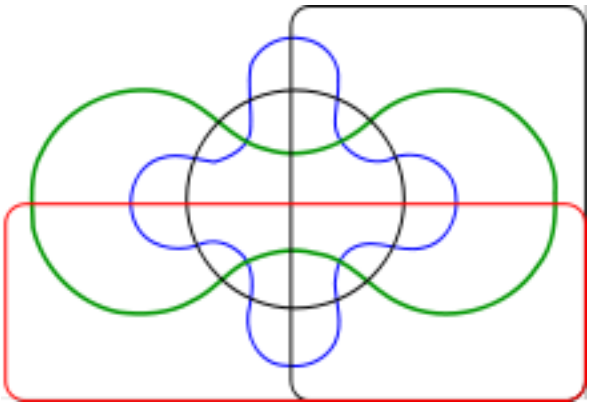

Figure 4: Edwards-Venn diagram for 5 sets **(Tanhuanpää 2006)**

The relationship between form and meaning is important here: form is both a structural concept and a visual design concept. In the former sense, meaning is created through structure (where structure is created by what is included and excluded from data sets to create relationships) and association (the choice of which data sets will be associated). In the latter sense, by applying a graphical treatment to the presentation of the data sets and levels of relationships, the meaning is communicated in the manner in which the form is represent and communicated.

In an entirely unscientific sense, staying with the general logic but not the formal use of Venn Diagrams, when data sources are added and sets related, multiple levels of meaning emerge from new relationships and although these meanings are governed by rules (dependencies) through associations, there need not be any pre-existing 'form' (for example, hierarchy) at the data level (we

just have data and the conceptual relationships that are created). Form in this sense is something imposed and can be designed as the author (or observer) chooses. Indeed, and again in wholly unscientific terms, there need not even be any particularly logical association between the data sets that are related, for example the ‘banana frog’.

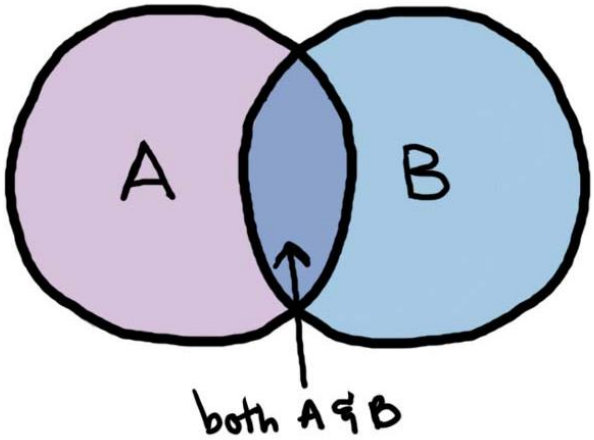

Figure 5: The intersection of both A & B (bananas and frogs)

Where the set of A represents bananas and B frogs, at the intersection we find the set of things that contain both the characteristics of frogs and bananas: the banana frog.

The point here is that in performing IA design we are performing an act of creativity and in this way we are allowed to bend the rules of science and logic because one, we are merely using Venn Diagrams as an analogy for a way of thinking and constructing form and meaning and two, because science is unlikely to ever create the banana frog which we just did in a few words.

The ability to observe a body of data (possibly made up of different types of data) and find patterns that can become categories; to merge, relate or overlap categories into a structure (or multiple structures that are then related and overlapped); to create meaning through the construction of associations and relationships between these forms (in the structure); and ultimately to communicate these meanings for the use of others, is the essence of information architecture design. And, much like imagining the internal world of a child creating something in Lego, the rules governing the design are totally up-for-grabs, flexible and subjective.

Structured thinking and problem solving

But what is the connection between the creation of meaning and problem solving?

When presented with a complex problem, analysis of the problem alone, will not provide a solution; an additional step is required, one where the designer formulates the solution. Underlying the burden of solving indeterminate problems there is creativity which in and of itself has its roots in play and fun; a child-like freedom to connect dots that otherwise would not be connected to create new forms and meanings that solve problems which thinking in a linear, or purely analytical manner, struggles to resolve.

When presented with a (complex) problem that cannot be solved simply it often helps to unpack the problem into parts. This provides clarity, new perspectives and creates opportunities to reconfigure the parts to discover a solution by reconstituting the problem. In the case of extremely complex problems there can be very large numbers of parts and, as previously noted, what we think or perceive the problem to be is often part of the problem. So the process of exploring the context of the problem introduces new parts that form the ‘big picture’ or total context of the problem. The designer is now working with the known or inherent parts of the problem in addition to the discovered, contextual parts of the problem. This creates a very rich environment of data and information to work from.

The process of deconstruction is then followed by reconstruction: a reformulation of the parts both in terms of how they are perceived and understood, their meaning in isolation and their meaning in

relation to one another. It is in the reconstruction that complex problems, often with complex solutions, are re-formulated (where a key aspect of the artistry of the designer is in the presentation of a complex solution as a simple one to the end user). This reconstruction is an act of composition and it is in this act, where a previously dysfunctional arrangement existed, that a new formation is created which provides a new meaning through a new form, a new arrangement of parts.

Design considerations in innovation

When innovating, a new formulation of parts is presented as something new to the user (and all stakeholders) and this often breaks with a user's 'conceptual model' or 'mental model' of the object they are interacting with (Norman 1998: 12). The dysfunctional formation and the associated conceptual model (how it is understood and the meaning it holds for the user) is what the user is familiar with.

The context is the present reality and stakeholders often struggle to imagine anything different to that (as do users) and thus the need for a designer to intervene. In this dysfunctional state, especially when stakeholders and users have no alternative, workarounds will be created usually resulting in inefficient and ineffective interactions and outcomes. Such workarounds can become so entrenched that the meaning of the formation can appear as knowledge of a truth, a single state with no alternative, something that is not questioned. When the meaning of the formation (and the context in which it exists) is accepted as knowledge both stakeholders and users in the problem lose the capacity to reconsider the formation.

When the formation changes to the extent that the entrenched conceptual model no longer applies, the innovation fails because the user doesn't understand it; the use and or the purpose of the innovation holds no clear meaning in the mind of the user. It is for this reason that designers try to make their innovations intuitive, removing the requirement for a full knowledge of the formation and context, proceeding directly to use (Krug 2000: 10)

Harmony is created when a new formation still holds the same meaning, or a new meaning that is equally capable of being easily understood, while still being intuitive. Although a user's knowledge of the context and formation is not a requirement for a successful design solution (consider a car or a microwave), a new formation with an understandable meaning will provide longevity for the design solution, because inevitable iterations required by the solution (naturally so because solutions operate in dynamic and changing contexts) will be more easily received by users.

Although making things easy to use (designing in intuitiveness and making complex or new solutions appear simple) is an essential part of good design, the skills required to deconstruct, observe and reconstruct meaning lie at the heart of the benefit of the application of information architecture design.

Conclusion

Our hypothesis is that structured thinking (which is both analytical and creative; structured and flexible) and the reformulation of meaning that it produces, lies at the heart of design thinking with the aim of solving indeterminate design problems. Divorced from the practice of information architecture design for digital environments, the thinking that characterises IA and its practitioners, could be considered to be a critical tool for solving indeterminate design problems within any or across multiple environments, and it is this skill, which we hope to develop in our students.

Ideally, the cognitive abilities and processes that facilitate structured thinking, as employed by information architecture designers, should be understood to form the basis for concepting, executing and measuring learning methods for design students. This will form the basis of future research in this topic by the authors where the 'thinking skills' of information architecture will be unpacked in psychological terms to inform teaching modules that will be tested and measured with students to determine their effectiveness as aids to developing learners' ability to solve indeterminate problems.

Acknowledgements

The authors wish to thank the Information Architecture Institute for their ongoing support through their awarding of the 2011 Information Architecture Institute Progress Grant for this research project.

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Short Biography

Terence Fenn has worked in the Department of Multimedia since January 2003. He is responsible for the interactive design and research orientated components of the multimedia programme. Originally trained as a fine artist, in 2001 Terence was awarded an Aus-Aid Nelson Mandela Scholarship to study a Master of Art and Design Education at the University of New South Wales in Sydney. Terence is currently the coordinator of the Multimedia Department's BTech programme. His primary area of interest is the role that design can play as an agent of support and positive change in the lives of people.

Jason Hobbs has been practising information architecture and user experience design since 1997. He pioneered the user journey design method and is internationally recognised in his field. For the past six years jh-01 / Human Experience Design has been one of the few truly beautique and independent user experience (UX) design companies in South Africa. The services offered include user-centered research and testing, strategy and design. Jason is an Affiliated Researcher at the University of Johannesburg's Research Centre Visual Identities in Art and Design. He is presently a part-time lecturer at the same university. He regularly presents at International conferences and actively works to grow the local community of practice through the SA UX Forum which he founded five years ago.

CREATING A COMMUNITY OF ASSESSMENT PRACTICE FOR GRAPHIC DESIGN THROUGH THE USE OF E-PORTFOLIOS

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Abstract

An area that currently challenges and will continue to challenge design education in the future is that of assessment. Current research in design assessment has identified approaches such as a holistic assessment, designed to evaluate product, person and process (de le Harpe et al., 2009) and authentic assessment both of which move towards a more learner-centered and process concentrated approach. With these changes come new challenges for design educators to substantiate and validate what they do when it comes to the assessment of student work.

The Graphic Design Degree offered by the Midrand Graduate Institute is presented at ten sites in South Africa and aims to maintain assessment standards, be efficient as well as cost effective. External moderation for all practical modules takes place twice a year at each campus. Student portfolios consist of bulky two and three dimensional work, visual diaries, large digital files for modules such as animation and the cost, fragility and logistics prevent the centralised marking and moderation of the work.

Electronic or digital portfolios (e-portfolios) have been used extensively in other fields, in particular to provide evidence of learning and professional development in the field of teaching and education, they could provide the department with not only a cost effective system for portfolio assessment, but with a tool to be used over the next twenty years that will enhance other aspects of design education.
In an on-going action research project, this paper looks at initial research on how the assessment practice of the institution could be enhanced through the use of e-portfolios.

Key Words: *e-portfolio, assessment, graphic design, holistic assessment, learning*

Introduction

Within an overall departmental action research project this paper looks at the aspect of learning and assessment as related to the context, motivation and considerations for a proposed switch from a traditional hardcopy Graphic Design student portfolio to an e-portfolio. An e-portfolio can sometimes be referred to as a digital portfolio, electronic portfolio or webfolio. The initial impetus for this idea was a call to address the administrative complexities raised by the internal and external moderation of student portfolios on ten separate campuses. Lecturers in the Graphic Design Department at the Midrand Graduate Institute (MGI) chose to take a broader view of the problem and possible solution, by considering the following aspects: student perception, learning, technology and assessment. Ultimately the total project will gather the data needed to make a valid decision for changing to an e-portfolio system or not. This paper considers the area of this author's responsibility which is assessment, although learning as a product/aim of assessment is included.

This is a long term project, especially as note has been taken of existing research covering both positive and negative aspects, case studies as well as the complexity of implementing e-portfolios in educational contexts. We acknowledge that a cautious, yet thorough investigation must be completed before any decision, let alone implementation can take place. In keeping with an action research approach, the project involves "identifying a problematic issue, imagining a possible solution, trying it out, evaluating it (did it work?), and changing practice in the light of the evaluation" (McNiff 2002: 7).
Ideally the department would like to make use of e-portfolios for more than assessment and other goals include enhancing student learning, gathering feedback from a wider community of practice, keeping parents and sponsors informed of progress and providing students with a career enhancing platform. No doubt more applications will be identified as the research progresses. "Yet, if e-portfolios

are only assessment tools, without value or meaning to the students who create them, they will lose vitality and become an exercise in discipline and surveillance" (Clarke and Eynon 2009:23).

Learning and assessment requirements in Graphic Design

Identifying what Graphic Design students should know and be able to do is guided by the expertise of the lecturers, the expectations of industry, government regulations, competition and good educational practice. Highlighting the most appropriate software, design and technical skills, and the skills needed to be a proficient design practitioner are relatively straightforward if the various role players are consulted. Shreeve, Wareing and Drew (2008:9) indicate that along with the skills mentioned above the "expectation that students will become independent, self-analytical, critical thinkers informs the entire period in higher education from the start of their course". Identifying, teaching, and assessing thinking skills that will benefit students and equip lifelong learners are not an easy or straightforward task for most educators.

In keeping with current research in the field of art and design education, the department is gradually moving towards an approach that encompasses the teaching, learning and assessment of "process, person and product" (De le Harpe, Petersen, Frankham, Zehner, Neale, Musgrave and McDermott 2009:39). The three areas are in reality difficult to separate, as an assignment or brief may cover outcomes that require the student to evidence aspects in all three areas. However *process* gives us the opportunity to encourage an action learning approach where students identify problems, research, plan, document, reflect, generate a solution/product and judge its success. The inclusion of reflection is in line with modern approaches to learning which "give priority to the acquisition of deliberately processed knowledge, especially self-knowledge, as a pre-requisite for the self-regulation of learning and creativity" (Cunliffe 2007:7). This approach encourages students to consider more than arriving intuitively at what they consider an appropriate solution for a specific brief, as Heller (2006:12) states students are expected to provide "a well-articulated reason for action" and this can be in written form and/or in the form of an in class presentation.

Current assessment practice

The Graphic Design degree is offered at ten campuses throughout South Africa. The structure, curriculum, courseware and assessments are designed by the lecturers on the main campus. The same assessment structures and processes are followed on all campuses with teams of lecturers marking each brief and an internal and external moderation of portfolios held twice a year.

It is common practice for art and design education to make use of the student portfolio as evidence of learning. Portfolios are used internationally at both school level and in higher education (Blaikie, Schönau and Steers 2004:302-314). These portfolios can take many physical forms but the aim is that "all kinds of evidence can be brought together in those portfolios that, in combination, give the possibility to draw valid conclusions about competence" (Van Tartwijk & Driesen 2009:792). The structure and system currently used at the institution for the assessment of practical modules follows a fairly traditional approach. This includes the setting of authentic assessment opportunities in the form of briefs which students complete during the year. The lecturer provides formative assessment and feedback in a studio environment and judgement and feedback by lecturer, student and peers occurs in critique (crit) sessions.

In line with outcomes based education (OBE) and to guide students, lecturers and moderators, end points and outcomes are defined for each module as are levels of competency and these are indicated in the courseware. The final assessment consists of a predominantly hardcopy (except for multimedia) portfolio that is assessed by a panel of internal and external moderators to arrive at a final mark. It relies heavily on the traditional connoisseurship approach, where the lecturer and the moderator are considered experienced experts in the field with a high degree of perception and sensitivity (Hickman, 2007:81). They view the final artefacts and arrive at an unbiased value judgement of the work. To many this approach is recognised as an extremely comprehensive and thorough assessment process "our field clearly has highly developed [assessment] evaluation systems which function at all sorts of levels. These have been developed to be consistent with the nature of the field and its specializations" (NASAD 2009:9).

There is some debate as to whether judging only the final artefacts can provide adequate assessment of the person and the process. Lindströms' (2007:88-93) research indicates that it is possible to assess both product and process in the final artefact if the criteria are clearly defined and scales used to indicate competence. Others such as De le Harpe et al. (2009:37-51), Ellmers (2006:1-10) and Ehmann (2005:107-13) describe how *process* should be described and emphasised above the final artefact, reflection should be encouraged and self and peer assessment should be included at various stages of the design process. "Findings suggest that student learning was deepened and shifted from a focus on the final design artefact or product to the process of learning, through a cycle of continuous reflection" (De le Harpe *et al*. 2009:39).

Evidencing process within current assessment practice

In an aim to evidence the process that students follow to arrive at a final artefact, students are required to record their research, reflect on their thinking and defend their decision making and evaluate the final product. Each student records the process in a workbook or visual diary, or a number of visual diaries. These are included with the final artefacts for all marking opportunities. The visual diaries range in effectiveness from student to student, some are rich in information, contain valid reflection by the student, offer evidence of extensive and appropriate research and are, in their own right exceptional designs products.

Unfortunately not all students see the visual diary as an opportunity to enrich their learning and lecturers encounter many of the common indicators that students do not see the relevance of the exercise and are not benefitting from it. Some students cut and paste source information and images printed off the internet, with little consideration to plagiarism and copyright, many resist reflection and writing adhering to the rather dated concept that "graphic designers are non-readers and -writers" (Bennett 2006:16), they are secretive about their concepts and research and arrange the material in a very poorly designed way.

To offer some support for the students lack of interest in the exercise of documenting their process and compiling the visual diaries by hand there are a number of relevant negative features regarding the current system. It is repetitious (source, copy, print, cut and paste), inflexible (mistakes are not easily rectified), the diaries are not portable (bulky, heavy and delicate), not easy to view (diaries become overfull and paging through takes time), expensive (printing in order to paste) and not in keeping with the students electronic and connected world (Facebook, blogs, sms, mms, Twitter). The diaries plus hardcopy portfolios are limited in terms of what one can include (no video, animation), there is no way to link different modules, it is not an effective format for job seeking (art directors often do not have time to page through hardcopy portfolios) and it allows for only limited exposure to the design community (available to lecturers, peers, external moderators only at a one person at a time basis). Certainly in terms of equipping students with the skills needed to reflect effectively, the department has to question whether enough is being done to assist with "how reflection is developed, taught, and modeled as a learning behaviour" (Rickards, Diez, Ehley, Guilbault, Loacker, Hart, Reisetter & Smith 2008:34).

On a practical level to gather the portfolios from all campuses together for an external moderator is not possible. Access to good and qualified moderators in remote areas is limited. From the perspective of a private education organisation that is accountable to its shareholders as well as to students and parents, funding external moderators on ten campuses, for all three levels of study, twice a year becomes a significant financial burden.

E-portfolios

There are many definitions of e-portfolios but for the purpose of this paper the emphasis is on a portfolio that would be both digital and internet based and could be used initially for assessment. "An electronic portfolio uses electronic technologies, allowing the portfolio developer to collect and organize portfolio artifacts in many media types (audio, video, graphics, text)" (Barrett 2001). Barrett (2001) continues to identify an e-portfolio as "a container that holds examples of student or teacher work (the "artifacts") and reflections on that work that transforms the artifacts into "evidence" of achievement. Many of those artifacts could be the results of performance assessments with associated evaluations and reflections".

Portfolios and e-portfolios have gained popularity in areas where there has been a move away from standardised testing including teacher education, medicine and nursing (Butler 2006:18). This seems obvious as in art, design and architecture portfolios have been used for many years because of their ability to present non-standard examples of learning. Internationally e-portfolios are still considered something new and different even though as Clarke and Eynon (2009:18) point out "across all higher education sectors, the study shows, the use of e-portfolios has tripled since 2003". By comparison to the main areas identified by Butler (2006:9), a small percentage of e-portfolio use falls into the fields of "art and design, dentistry, psychology, engineering and information systems".

Portfolios have been used where standardised testing is seen to be undesirable or inadequate and lend themselves particularly to "alternative assessment, authentic assessment, or performance-based assessment" (Barrett 2001). For instance in medical education the lower levels of clinical competence made up of *Knows, Knows How and Shows* as described by Miller in Van Tartwijk & Driesen (2009:791) can be assessed using written tests and simulations, however portfolios are used for the highest level *Does* which "is concerned with independent performance within the complex environment of day-to-day practice" (Van Tartwijk & Driesen 2009:791).

In addition to serving as an assessment tool e-portfolios can serve single or multiple purposes which will not be discussed in detail, but deserve a mention. Love and Cooper (2004:65-81) identify the following purposes: a platform for checking for plagiarism, automation of certain administrative processes and making others such as moderation more equitable, improving student learning, involving students in authentic learning situations and improving students' computer based skills, a transparent platform for quality assurance. In terms of career development they provide students with a platform to showcase their work along with their planning, research and reflection in their own voice. The e-portfolio can then be added to as their career develops providing a platform for, and evidence of, lifelong learning. E-portfolios can act as effective feedback platforms with lecturers, peers and industry partners contributing to learning, an example of this is given in Taylor and McCormacks' (2007:1-7) article *ePortfolios and collaborative dialogues between professionals and graphic design students enhance educational outcomes*.

Advantages of e-portfolios

Considering the drawbacks of the hardcopy portfolios especially for the remote campuses an e-portfolio system could offer significant advantages to the students, lecturers, external moderators and the institution. A web based portfolio would allow for assessment by an external subject expert based anywhere that allows internet access. Links can be provided to supporting assessment documents such as outlines, standards and rubrics which can all be housed in an easily accessible form for moderators to move backwards and forwards from and to. Marks can be filled in online. All campuses would have the same external moderator and parity could be ensured. Costs in terms of transporting moderators to remote campuses or employing moderators to assess very small groups would be eliminated.

The e-portfolio is recognised as "charting the development of students' thinking over their course of study" (Butler 2006:2) and as such is aligned with the departments' approach of assessment of both person and process and is ideally suited for authentic assessment opportunities (Ó Súilleabháin 2004:1-11). Students are easily able to link evidence in various modules with their experiences and so have the potential to assist with providing a more holistic picture of their learning. The approach taken to assessment of the e-portfolios closely follows the current assessment practice with the e-portfolio providing an environment for formative assessment and feedback while students work on briefs and then the final portfolio is used for summative assessment.
In the article *The Information Age Mindset Changes in Students and Implications for Higher Education* by Jason Frand (2000:15-24) he identifies ten new mindsets in students. Some of these include that students can with the aid of technology do things without knowledge or understanding, they multitask most of the time, they would rather type than write by hand, they must stay connected, they do not tolerate delays well and they do not see "the division between the owner, creator and user of information" (Frand 2000:22). All these attributes indicate that we should be looking carefully at how we educate and assess these students and what tools we should be using to do so.

Bass and Eynon (2009:1-29) identify through the *Visible Knowledge Project* (VKP) which gathers research from lecturers who use emergent Web 2.0 tools in their teaching, that in fact student learning

has changed and they have identified the types of learning that are evidenced when these technological tools are used. They identify them as “adaptive, embodied and socially situated” (Bass & Eynon, 2009:10). These enable students to adapt more easily to new information and changes and to be innovative. Students can pay more attention to intermediate processes *(process)* and evidence this more easily. Lastly they give students “a sense of audience and public accountability” (Bass & Eynon, 2009:11). These aspects then reflect on their development as person and design practitioner. All of these types of learning would certainly benefit any Graphic Design student and graduate and when related to the previously mentioned findings of Frand (2000:12-24) make use of students comfort and familiarity with technology to enhance assessment and learning. The fact that these technologies lend themselves to evidencing process is of particular benefit in terms of the departments learning and assessment objectives.

Pilot projects

A number of pilot projects have been planned which look initially at gathering information relating to students willingness to switch to E-portfolios, evaluating the standard of the E-portfolios produced by students and identifying any potential hurdles. These make use of a combination of questionnaires, interviews and reflection to gather input from both staff and students. As indicated in the introduction, the research into switching to the e-portfolio is still in the beginning stages. Initially the concept was to find a way to assess all student work from the various campuses at a central point, to that end and at the most basic level student portfolios could be converted from their existing hardcopy format to digital by photographing the work and burning these and digitally designed files to CD or DVD. A small project related to this approach was launched at the end of 2009, in order to evaluate three aspects. The first being whether the campuses would be able to provide adequate digital portfolios for assessment, secondly whether the current external moderators were willing to assess digital portfolios and thirdly whether a system could be implemented to manage the process. A small group of external moderators were asked if they would be prepared to assess digital portfolios burnt to CD and they all indicated that they would be willing to do so.

After receiving criteria relating to naming, file formats and file sizes lecturers on two of the remote campuses photographed student portfolio work in one specific first year module. These files were e-mailed along with mark sheets to the Midrand campus. At this point the files and mark sheets were combined and sent on a CD along with a feedback form to an external moderator. The external moderators’ marks closely matched the internal and external moderation already done on campus.
Generally the process worked effectively and moderator felt that he could adequately asses the work received. The moderator pointed out that he could spend more time with the work, as often when moderating on site there is pressure to finish the process within a certain time frame. There were certain practical issues that arose, such as the quality of photographs and delays in delivery. The time demands made of the lecturers and the sheer volume of work that would be generated if this approach would be used for all modules on all campuses for all students.

Although the first project offered some solutions relating to portfolio assessment on multiple campuses, the system cannot provide the benefits that an e-portfolio can. In order to reap the benefits of using the e-portfolio for more than just assessment lecturers would have to design each brief and module with this in mind. Both staff and students would have to work in a different way to what they are used to, especially in terms of supporting and encouraging reflection. Reardon and Hartley echo this by stating that “an e-portfolio program includes a technology-based intervention, varied staff with a wide range of skills, a plan for marketing the e-portfolio to students and other stakeholders, computer and technology support, counselling and teaching personnel to help students reflect on learning experiences and material for inclusion in the portfolio, and a plan for evaluating the e-portfolio program” (Reardon & Hartley 2007:84).

A second pilot project, in which students were given the option to use a blog or a hardcopy visual diary, was launched at the beginning of 2010. Students registered for History of Graphic Design 3 on the main campus and History of Graphic Design 2 on the Pretoria campus participated in the project. The assignment was designed in such a way that the students could submit hardcopy or blogs and the outcomes, assessment criteria and marking rubric could be used for both platforms.

Traditionally students collect and evaluate written as well as visual material for these assignments and are expected to present their research, ideas, reflections and comments in an A3 visual diary. Sources

include newspapers, books, magazines, blogs and social networking sites which are used to gather information and to elicit comment. The diary is submitted at various deadlines during the year. Although the assignment falls within a theory module, the working method that students are required to follow (plan, research, analyse, reflect, document and present) is very similar to what they are expected to do in practical modules.

Through a questionnaire it was established that a high proportion of students had used blogs before and felt comfortable with their level of expertise in that area. “In an age of multimedia self-authoring, student interest in creating rich digital self-portraits has grown exponentially. As evidenced by the popularity of social networking sites such as sites like Twitter and Facebook, a digital portfolio for student learning speaks the language of today’s student body, made up overwhelmingly of millennials who came of age using social networking sites” (Clarke & Eynon 2009:18). In general students were positive about changing to the blog and indicated that they saw certain benefits, examples given by students included “gain web based skills and communication with design community,” “interact with the design community at large” and “making valid commentary and expressing ideas clearly”. The majority of students’ negative comments regarding the blog related to limited internet access on campus and at home, and the slowness of the internet connection.

The pilot project has had rather limited success and the evaluation of the standard of student work has been hampered primarily by technical issues. However on a superficial level the standard of the work appears to be equal to the hardcopy diaries. For the assignment students made use of freeware and sites such as Blogger and Wordpress. On the Pretoria campus all of the six students chose the blog option. On the main campus only three of the nine students chose the blog option. As the lecturer had not been able to access the student blogs because of institutional internet policy and a lack of familiarity with the technology, there had been no feedback and follow up with students. Training for students and lecturers on all campuses will be an essential component of embarking on an e-portfolio strategy. There has been one instance of a blog being hacked which highlights issues of security. Internet policies on campus have not been encouraging of this type of approach, with student and staff access to blogs being blocked and this has hampered progress with this pilot project. A third pilot project is planned for the second semester of 2010 involving the third year Web Design students with note taken of the problems already identified.

Conclusion

E-portfolios lend themselves to the collection of diverse types of evidence, keeping record of learning over time, providing easy links to a variety of sources, they occupy cyber rather than physical space and are seen by students to be part of their technological world. This makes them an obvious candidate to replace hardcopy portfolios. The possibility that e-portfolios can be used to enhance learning, improve student skills and employability and assist with administration are some of the additional advantages illustrated in existing research.

The two pilot projects and survey launched on campus indicate that students are generally positive about using a more technologically based tool to evidence their working and thinking processes. The accurate digitising of all handmade pieces will have to be considered in terms of photographic expertise, time spent and the management a considerable amount of data. The pilot projects have highlighted that additional training is required for both staff and students in order to improve technical skills. Lecturers when designing learning and assessment opportunities will have to consider the new platform and tools available to them as well as how this generation of student learns. Is students are required to reflect they must be given the skills to do so. Certain experiences during the pilot projects have already raised concerns regarding internet access, organisational policies and security.
The viability of using e-portfolios to replace hardcopy portfolios in this particular organisation has as yet not fully been established or refuted. The long terms research project will continue to investigate all relevant aspects before final conclusions can be made. The pilot projects and the existing examples of e-portfolios used in other areas of education, strongly indicate the potential of e-portfolios to be used to enhance the assessment practice for the Graphic Design course offered on multiple campuses.

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Short Biography

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WHY DESIGN CANNOT BE TAUGHT: GRADUATE ATTRIBUTES AND LEARNING IN AN AGE OF SUPER-COMPLEXITY

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Abstract

Design thinking features in post-modern educational literature (Doll 1979, 1986, 1993; Kress 1996; Cope, & Kalantzis 2003) as a construct that purportedly enables educators to prepare students to deal with complexity and 'super-complexity' (Barnett 1996; 2000; 2003; 2006) when they enter their professions. Although not explicitly stated, post-modern educational literature tends to stress the importance of systems thinking, critical problem solving, cognitive flexibility, abductive and connective reasoning as competences that prepare professionals to also perform optimally within a post-modern cultural situation and in age of information and super-complexity.

In 2010 the University of Johannesburg embarked on the implementation of what it terms its 'Learning to Be Philosophy' (Gravett, Amory & van der Westhuizen 2008) and institution-wide initiative that attempts to position the University strategically within the higher education landscape of South Africa. I contend that it is a philosophy that stresses "operational performativity" (Barnett 2000:40) in producing a new kind of graduate; one that has the capacity to engage professionally with a world of super-complexity through 'being'. This institutional philosophy, a blend of constructivist and phenomenological theory, argues that learning is authentic or deep when a student embodies knowledge by producing it in complex learning situations. Learning is understood, within the philosophy, beyond the scope of the transmission, consumption, processing of information but in terms of the application of conventional professional wisdom. It suggests that graduates, as professionals, need to be able to be durably adaptable and value learning as a lifelong enterprise (Barnett 2006: 59).

My paper critiques the Learning To Be Philosophy in terms of Barnett's (2000: 127 -139) notions of the new university in the age of uncertainty. Drawing on the work of Donald Schön (1990), I argue first, that designerly thinking (Nigel Cross 2008, 2011) is a form of artistry that should play a crucial role in not simply preparing students to perform supercomplexity in their professions but to develop their capacity to show insight into apprehending and producing supercomplexity. I argue that despite the importance of artistry to higher education, it cannot be taught because it is not strictly speaking a 'competence' but a set of dispositions. My central hypothesis is that design thinking and artistry can, however, be learnt, as an interrelated set of appreciative dispositions that show understanding into the condition of supercomplexity. I argue implicitly that a situational, transformative, durational and dialogical pedagogy is required in order to realise artistry as a graduate attribute. A pedagogy of this kind would demand a radical revision of the traditional functions of the university educator.

Keywords: *supercomplexity, design thinking, higher education, artistry, pedagogy*

Background: Supercomplexity and the University of Johannesburg's Learning to Be Philosophy

This paper attempts to sketch out an argument for the importance of designerly thinking to the project of higher education in an age of supercomplexity. It is written with the view to initiate a mid to long-term empirical study that investigates the role design thinking is playing and can play in enhancing learning across Faculties in the University of Johannesburg (UJ). Throughout my career as a visual arts and design educator I have always entertained the notion that a sectoral definition of design has generally prevented the higher educational community from embracing its potential for deep learning. The human capacity to design is an essential aspect of all learning. In this notion, I have been led primarily by the work of Gunther Kress (1996, 2003, 2006), Nigel Cross (2008, 2011), Donald Schön(1990), Felix Gauttari (1995), John Dewey (2005), Lev Vygotsky (1978) all of whom, in their own ways, understand learning essentially as that human capacity *to design*.

I believe that such an insight can become important for a university such as UJ because it is a relatively new institution that is openly grappling with the problems of defining itself as a *new* university. In many senses, the institution is tackling the task of designing its identity from scratch. UJ is unique in the higher education landscape in the sense that it is attempting to forge a coherent post-colonial educational identity within the context of the mix of vocational, professional and academic programmes that it provides. It is also attempting to define itself the within the context of the diverse institutional legacies from which it was forged. I also believe that design thinking can play a powerful role in supplementing its institutional "Learning to Be Philosophy".

In 2010, the institution launched and rolled out its Learning to Be Philosophy. I was lucky enough to participate in a series of pilot workshops offered to the Graphic Design Department by the Centre for Professional Academic Staff Development at UJ. The series of two workshops was designed to prepare the department for the development of its new Communication Design degree curriculum, and pedagogically for the intake of the first cohort of first year degree students in 2011. I therefore had a first-hand experience of the University's Learning to Be Philosophy. This experience sparked off a personal engagement with the ideas embedded in the philosophy and in particular the work of the educational philosopher Ronald Barnett. This resulted in a paper delivered at the Teaching Excellence at the University of Johannesburg Conference entitled *Habitus and Reflective Practicum: Tensions Between Notions of Teaching and Learning In Design Education* (Gray 2010) upon which this paper is largely based.

The University of Johannesburg's "Learning to Be Philosophy": Performative instrumentalism in the constellation of production, self, emancipation.

Three features stand out from UJ's Learning to Be Philosophy which are pertinent to my later discussion around the value of design thinking in the project of higher education.

The first contention of the position paper of 2009 is that the role of the modern university is not to disseminate information but to facilitate understanding through the quality of discipline and profession-related learning experiences it offers to its students. In making this insight, the philosophy draws on the work on "deep learning" by Jerome Bruner (as cited by Gravett, Amory, van der Westhuizen 2008: 2), an educationalist, who, in some respects, like Paulo Friere (2005), maintains that authentic learning is not a question of dispensing and receiving content but facilitating authentic engagement with it. Bruner departs from Paulo Freire on the question of engagement in his assumption that authentic learning is simply an active and dialogical engagement on the part of student with knowledge constructs rather than with broader ethical and social justice concerns. It is left to the professional knowledge and wisdom of the educator to lead the student to "see" the world in a transformed way (Gravett, Amory, van der Westhuizen 2008: 3). The students lived experience does not feature prominently in this thesis on deep learning. The position paper argues for a graduate who has been profoundly shaped by the disciplines in which they have been immersed by their educators in the course of their studies. A position such as this implicitly assumes that goal of "learning to be" is the construction of authentic *professional identities* (rather than the creation of emancipated human identities) and that this identity is the outcome of the ability of the educator to engage students with a deep knowledge of their own circumscribed field. The educator's responsibility lies in his/her ability to engage students in the disciplinary/professional paradigms and the related processes that will transform the student and, by extension, ultimately prepare them for "graduateness" (Barnett 2006:55) which ultimately means preparing them for the *world of work*. In this sense, the "Learning to Be Philosophy" position paper implicitly positions the role of the university and its educators in professional-instrumentalist terms and situates its project within what Barnett (2000: 48, 56) would call "the constellation of production" and the "constellation of self". The point is that the first aspect of the "Learning to Be Philosophy" argues within the framework of "instrumental performativity".

The second prominent feature of the philosophy is that it also attempts to transcend its own narrowly conceived instrumental performativity (highlighted above) by also positioning the university within the "constellation of emancipation" (Barnett 2000: 56). Educators are encouraged, in the "Learning to Be Philosophy", to focus on forming and transforming the identity and dispositions of the student. But not any identity will do. The dispositions, personal attributes of the student need to be geared up for a professional life which would mean a deep internalisation of the relevant "knowledge domain" (Gravett, Amory, Van der Westhuizen 2008: 2 - 3) as well as the attendant outcomes that mark out professional identity in an age of supercomplexity including cognitive flexibility, the ability to transfer of skills, critical

thinking skills and so on. The dispositional emphasis of the argument suggests that the kind of professional identities that need to be forged are those that have the capacity to see own identities as unique and incomplete, identities that require a "lifelong" learning in order to be effective within their respective professional domains (Gravett, Amory, Van der Westhuizen 2008: 4). As a catch-all term, "being" is underscored by both the harder performative dimension of professional life (skills, competence, technical capacity) and the new softer demands that are being placed on professionals today (ethics, cognitive flexibility, understanding etc). But ultimately here, "being" (despite the emancipatory rhetoric of the position paper) is largely framed in terms of the transmission, internalisation and performing of, again, *professional* "domains of knowledge".

The final aspect of the philosophy relates to curriculum design and it is here that the philosophy suggests that it is primarily entrenched in the "constellation of knowledge [production]" (Barnett 2000: 48-49). It is good and well to imagine a new kind of "graduatedness" but how does the university go about creating this outcome? What is the transformative/experiential pedagogy and curriculum that is required to realise the capacities required above? Drawing on the work of Johan Muller (2008), the philosophy offers a distinction between "conceptually" and "contextually" oriented curricula (Muller 2008:33). This distinction asks educators, programme and curriculum designers to be mindful of the fact that learning and knowledge formation in their respective disciplines must *necessarily* assume different forms. The student's deep engagement with knowledge domain must be highly structured and thus the curriculum must take either a "contextual" slant (where knowledge gains purpose and legitimacy only within bounded situations) or "conceptual" slant (where knowledge is built in conceptual sequences or scaffolded). The adoption of Muller's ideas within the context of instrumentalism suggested above shows a favouring of a particular cognitivist view where knowledge structures are seen as stable, apriori, disinterested and ultimately detached from the student's frame of reference.

In many senses, this values contained in this philosophy mark out the attempt, by a young university (and it must be added, one with a technicist and conservative legacy) to distinguish itself from its competitors by focussing on a quality of 'innovative' and 'excellent' teaching that it envisages will produce better results under a new set of societal conditions of uncertainty and supercomplexity. In terms of Barnett's constellations of roles for the university, what is strikingly absent is an emphasis on critique and democracy. The implicit focus on production, self and emancipation is fitting for a university that has generally focused on vocational training. It make sense, given what I have argued above, that UJ in its advertising, calls prospective applicants to "be what you want to be". What needs to be asked, however is why the "Learning To Be Philosophy" focuses on the operative/instrumental performativity in the notion of "being"?

Supercomplexity: the end of knowledge and the crisis of higher education

> [t]he point of this excursion into knowledge production is to underscore the larger point about the dissolving university. The university has dissolved in a double sense. Firstly, we can no longer understand the university as a unity in itself: it has dissolved into segments, many in which in turn are interpolated in a wider society. Secondly, Knowledge has dissolved into knowledges. The inner sense of there being available a single story of its knowing efforts- captured under such descriptions as objective knowledge or propositional knowledge *or anything else* – can no longer seriously be entertained. Now we are faced with knowledges, plural, sustained through different complexes of knowledge processes (Barnett 2000:17).

Barnett (1996:21 -24) makes the claim that higher education is in crisis because it can no longer continue to occupy the constellations of production, emancipation, critique and democracy that it traditionally occupied. Critically, in the face of the supercomplex challenges that it faces (and which are largely of its own doing) and the post-modern situation in which it finds itself in, university must take on board, in the most fundamental way, new conceptual coordinates; those of "uncertainty, unpredictability, changeability, contestability" (Barnett 2000:63). According to Barnett (1996:39 -44), because of the changing nature of knowledge itself, the university is forced into a situation where it cannot just continue to simply produce knowledge, transform existing identities, engender freedom, and instill a culture of critique. Rather it must provide *insight into the condition of supercomplexity itself* and at the same time play the critical role of producing it. This requires a radical rethinking of both the traditional and modern forms of the university which I later contend design thinking has a great deal to offer.

It makes sense for an institution such as the University of Johannesburg to develop a 'teaching philosophy' that attempts to be responsive to the shifting landscape of higher education because, as Barnett points out, the very concept of higher education is in a crisis of "responsiveness" (Barnett 1996: 20 -24), "dissolution" and "attenuation" (Barnett 2000: 20). The shift from an industrial to a post-industrial society has meant that knowledge, knowledge production and by extension learning itself has become "dispersed". Because of this, the university can no longer claim to be the sole custodian and/or disseminator of knowledge. However, this is not only a problem of knowledge dispersal. The very foundation of knowledge is in question. As a result the university cannot lay claim to either monopolising knowledge or employing knowledge or understanding as a catalyst for the transformation of existing identities (whether professional or other). However, this is not to say that its role as a knowledge producer has been reduced. The university must now also assume the "responsibility" (Barnett 2000: 78) of facing its "fragility" (Barnett 2000: 65) and accept its function as a vital organ in ensuring the survival and functioning of the "learning society" by regulating, monitoring and producing the very conditions of supercomplexity that it played a role in making in the first place.

Barnett (2003: 45) suggests that the post-modern university has, by and large, *not* risen to the challenge of the learning society and the societal shift to supercomplexity. It has responded to this shift by simply becoming an institution "in society and not an institution of society" (Barnett 1996: 22). As a result of an unwillingness to engage seriously with the new epistemological condition of uncertainty, the higher education institution has found itself in a position where it has mostly lost its autonomy and, given the vacuum of value in its own institutional culture, it has become increasingly regulated and controlled by external agencies such as the state, the workplace and the market. These external agencies seek to make higher education accountable to its own interests under the veil of those of 'society' (Barnett 1996: 43).

But what is supercomplexity? The term can be understood in both a superficial instrumentalist sense and a more serious hermeneutic sense. Superficially, supercomplexity seems to suggest, on the one hand, that information, data and knowledge can be conflated. A more substantial and radical claim is that post-modernity (putting supercomplexity aside for a moment) has effected a dramatic change in the very status and character of knowledge. In the first, more superficial understanding of supercomplexity, the university must now accommodate the dubious claim that knowledge 'doubles' every few years, it 'grows exponentially', becomes 'outdated', it 'multiplies' and 'proliferates' and so on. How does the traditional, academic university assimilate the view that knowledge is perhaps nothing but information or data that can be commodified, measured, bounded and parcelled out when traditionally it has taken the view that knowledge and truth were stably related? Within the view knowledge-as-information, the role of the university is not so much to conserve and transmit stable bodies of knowledge or to facilitate the pursuit of truth but rather to build the student's capacity to control and manage the proliferation of information and data. Concepts such as the 'knowledge society', the 'information age' offer a model of human understanding that departs radically from the university's deeper conception knowledge as a pathway to critique, emancipation, understanding and greater consciousness. Knowledge is reframed, within the information age, as something that is both quantitatively objectifiable -'out there', fixed, attainable an exchangeable commodity, "educational/cultural capital" (Bourdieu & Passeron 71 - 106), largely instrumental- and as a qualitative essence -a capacity, a relation, a construct. The point is that in the more superficial sense, supercomplexity, knowledge is understood within narrowly technicist and instrumental terms (knowledge as 'know-how'). However, the more serious challenge comes from the post-modernist view that the very frames under which knowledge is recognised, constructed and apprehended are themselves contestable which results in the conditions of supercomplexity. What is clear from both definitions of supercomplexity is that knowledge as a path to disinterested truth is no longer the source from which the university can claim its legitimacy. So where can it find its legitimacy?

Barnett argues that the crisis of knowledge in higher education makes it more rather than less susceptible to cooptation by instrumentalist reason or the logic of late capitalism. In its inability to deal with the serious epistemic threat posed by post-modernism and the learning society, higher education has fallen prey to an empty relativism that can only lead it down two roads. Either it takes the road of late capitalist instrumentalisation and operationalisation or it takes down the road where it succumbs to an internal schizophrenia. Here, the university attempts to hold on to both its own internal criteria or values (academic competence) or those values imposed from the outside (operational competence) (Barnett 1996: 159). Accepting the second road of laissez-faire relativism would mean that a gulf of value opens up: "the university has no responsibility to uphold a larger universe of value" and because

it is “unsure of its value basis” external criteria come to dominate it. By virtue of this lack it must surrender academic autonomy and the wisdom, insight and understanding associated to this to competence, skill and measureable outcomes. In other words, under the spectre of post-modernity and supercomplexity, the university is forced into a situation where it must relegate the traditional value of knowing-for-its-own-sake (Knowledge), for forms of capitalist “instrumental knowing” (knowledge); or knowledge derived from the state, the market place and the world of work (Barnett 1996: 40).

Finding its unifying traditional and modernist narratives collapsing under its feet, the university is forced into a situation where it must accept and favour forms of knowledge “that can be wrought upon the world with calculable and predictable effects, effects that are measurable” (Barnett 2000: 24)- ‘outcomes’- for want of a better alternative. However, in its surrender, it cannot entirely dispense with its traditional roles because it “fears a position in which it becomes simply a dependent variable, yielding up to an economy and to the consumer those gifts that they demand”. As I will argue in the next section, under the sign of its instrumentalisation and operationalisation and in the face of the crisis of knowledge that it refuses to acknowledge, the university comes to assume two contradictory roles. The result of a split in its personality means that the university comes to stand, in a post-modern situation, as both a reproductive and transformative apparatus which are two ethical positions that it cannot reconcile (Barnett 2000: 28).

The split personality of higher education: an education for insight and understanding or an education for competence?

This value split in the personality of the university is important because it manifests itself in the teaching and learning practices that take place within it and the values that the university assigns to the learning process itself. The two value positions, set out by Barnett (2000: 40): the “dialogic-collegiality” position and the “performative-instrumental” position logically come to be manifest in both the structure of curricula and in the pedagogical strategies that educators use to realise their objectives. The two “hidden” institutional ideologies may effectively split the professional identity of the educator in two. The educator may not be able to reconcile (either ethically or conceptually) two radically misaligned approaches to human learning. Barnett terms these opposing educational positions the “understanding/insight” approach and the “competence/outcomes” approach to teaching and learning.

Clearly, for Barnett, the competence approach is patently inappropriate to the task of higher education in an age of supercomplexity for a number of reasons. Barnett (1996: 69 - 82) criticises a competence approach to higher on both an ideological and practical level. Ideologically speaking, an education for competence makes serious assumptions about human nature and indeed the nature of learning and the character of knowledge itself. The mechanistic nature of outcomes and competence statements threaten individual autonomy (subjectivity) and collective agency (intersubjectivity) in their closure. Outcomes negate a “genuinely open, interactive forms of reason and engagement [...] in which there are no outcomes” (Barnett 1996: 78). Pragmatically speaking, it may be asserted that because we live in a world where the status of knowledge is rapidly changing the kind of competences that the university and the workplace requires from students “cannot be specified in advance” (Barnett 1996: 75). Aside from the inappropriacy of outcomes for dealing with the contingency and contestability of professional knowledge, competence education tends to valorise observable skills without entertaining the fact that even the most rudimentary skilfulness or technical ability requires deep understanding. Even the lowest order competence must be developed on a foundation of understanding and further through the situational application of knowledge and reflection-in-action. An education centered on technical rationalism or ‘skills development’ thus ultimately debases both knowledge and understanding. In competence education, knowledge is instrumentalised and valuable only in so far as it can be embedded in “skill” that is relevant only because it can serves the interests of capital. What counts is not that which functions to further human understanding for its own sake but that kind of ‘embedded knowledge’ which can be instrumentalised and put to work. Competence or “know how” thus represents, for Barnett and others (Lum 1999), an “impoverished view of human action in which individuals are caused to perform against external standards”, where the human individual is “no longer the author of their own action” (Barnett 1996: 77) . With this in mind, competence can only be practically imagined as the most mechanistic and superficial form of learning that cannot meet *either* the needs of the post-industrial workplace (flexibility, transferability, critical thinking skills) or traditional academia. More pertinently competence education can be criticised as essentially anti-democratic

and insidiously authoritarian because it claims a certain universalism for the outcomes at the core of its curricula (Barnett 2003: 75).

For Barnett (1996: 99- 111), "understanding" (a traditionally academic competence) is far better attuned both to the traditional values of the university and the new operational pressures placed upon it by a supercomplex, post industrial economy. The development understanding, insight and wisdom must remain the paramount virtues for the project of higher education because these *values* are better equipped to produce insights into supercomplexity and the means to produce it. An education centered on understanding can achieve this because it embodies the paradox of learning and thus resonates strongly with the key qualities of an age of uncertainty. Understanding is paradoxical because although it strives for closure it has no end. It is uniquely individual- "there is no understanding only *an* understanding". However, at the same time understanding is both intensely individual and inherently social. Understanding, given its interpersonal/interdiscursive/intersubjective nature is thus simultaneously bounded and unbounded (Barnett 1996: 105) and because of this it "is active, it is an engagement, is a form of agency and self expression. It is an expression of individuality and it strikes against the conventionalisation of competence. For Barnett, understanding becomes political because it challenges convention: "developing understanding is a subversive activity" (Barnett 1996: 105). An understanding approach is invaluable to higher education and the world of commerce and society because its dialogic potential presents students with the cognitive, appreciative dispositions and resources that are required not so much to deal with knowledge per se as with the changing character of knowledge itself. If knowledge does not exist, in a post-modern situation, understanding can provide students which insight derived from "knowledge processes in different knowledge settings, exploiting knowledge possibilities" (Barnett 2000:18).

This tension between competence and understanding, for me, lies at the heart of the problem of UJ's *Learning to Be Philosophy*. It strikes me as ironic that an institution can promulgate *at the same time* an education centered on competence (in its operations) and education based understanding (in its philosophy). Educators, are encouraged, through the institutional philosophy, on the one hand, to attend to the tremendous importance of understanding and wisdom in preparing students for a world of supercomplexity but are also required to realise this ambition through a competence approach to the curriculum. If higher education, generally, clearly suffers from the disorder of split self how can it realise itself amid the conflicts between instrumental reason and hermeutic/critical reason?

An epistemic affair? Design thinking a new universal/university paradigm?

> In what sense, if at all, can the dissolved university retain a sense of unity of process, self-understanding, communicative powers and purposes (Barnett 2000: 18)?

So far, I have argued that two sets of conflicting ideological interests threaten to suppress the realisation of a new university founded on "fragility" and "uncertainty" (Barnett 2000: 65, 69 -71). I have suggested that the way that the character of knowledge is understood (the episteme) lies at the heart of the problem of how the university begins to rethink its agency in an "age of uncertainty". It is here that I contend design thinking can be of critical importance in moving beyond a simplistic competence model of learning in higher education.

Design offers an alternative "conversational" and relational (Schön 1990: 15) account of knowledge, learning and understanding. Its approach is one that is one that is generally marginalised in the context of the university because its forms of knowing are perceived to deviate from propositional and instrumentalist reasoning which are forms that are favoured by the traditional and modern university respectively. Design is possibly a form of praxis that possesses the ability to concretise multiple reflective, experiential and discursive frames in the production of abstract models and physical artefacts that encode within it *a variety of human interests*. Design suggests a view of knowing that is "abductive" (Cross 2011: 10) rather than deductive or inductive; one that is simultaneously actionable, propositional and critical and as such provides affordance to the learner's synthesis of uncertainty, unpredictability, changeability, contestability in a material form.

Notably, complexity and indeterminacy has been frequently noted as a fundamental aspect of all design activity (Cross 2011: 12; Buchanan 1992: 10; Schön 1990: 18). I would perhaps add to this by suggesting that the ability to handle supercomplexity is the marker of both superlative design practice and exemplary professional practice in *all* domains and disciplines. Design marks a radical departure

from conventional forms of knowing because, within this paradigm, knowledge is neither 'discovered', 'understood', nor operationalised but made visible through the synthesis of competing and multiple human interests. Knowledge is seen within a design paradigm as an emergent property of the synthesis of pattern, structure and process (Capra 1997: 20). Through the reiterative process of design, higher order systems are catalysed through synthesis. There is the potential to produce living systems by pushing a solution to the threshold of equilibrium or chaos (Doll 1993) where degrees of probability are entertained by the designer rather than the pursuit of truth, knowledge or certainty. In the design process knowledge is both actionable (Schön 1995) and reflective. It does not reside in any single component of the overall design but in the sum total of a system of relations and affordances which the designer manipulates in order to produce, what the design field, terms a "solution". Reasoning, in this process is said to be "abductive", "tacit" (Polyani 2009) or "intuitive" (Cross 2011: 10), in the sense that propositional knowledge is not simply operationalised; hypothetical knowledge is not simply tested. Rather, in the conversation between designer, the "situation" and the "materials at hand" (Schön 1990: 25) a range of human interests are united in a series of provisional truths that are then subjected by the designer to further processes of conjecture, refutation and synthesis. In this sense, the activity of design, like learning is radically *indeterminate and situational*. Design, as the exemplar of the learning process itself (Dewey as cited by Schön 1992: 120) suggests that learning is always *motivated* by the interplay of a variety of human interests.

Barnett (1996: 146), drawing heavily on the work of Habermas, is able to define the interests that should shape higher education (hermeneutic and emancipatory interests as opposed to the dominance of scientistic interest) but he is unable to articulate the kinds of teaching and learning practices and methodologies that would fully *realise* it. He sees three interests at play in the learning process: the scientistic, hermeneutic and emancipatory interests. In his conception, only the academic fields embedded in hermeneutic and emancipatory interests are capable of critical reflection because their forms of reason are inherently open and self-regulating. In partial agreement with Karl Popper's (and Kuhn's) criticism of the scientific field, Habermas posits that the scientistic or instrumental interests are the most closed and thus lack the capacity for authentic self-reflexivity. The sole interest of science as "a system of structured knowledge independent from the world" is in "predicting the workings of the environment […] and in controlling it" (Barnett 1996: 146). In contrast to the scientistic interest in closure and control, human beings also have a hermeneutic interest in "comprehending each other and communicating with each other" which places understanding of the world for its own sake above putting it under human control. Because of the autonomous nature of hermeneutic interests "circles of interpretation" are "necessarily open and never conclusive" (Barnett 1996: 146). For him, the emancipatory forms of human interest supercede both instrumentalist and hermeneutic forms of human interest because it is premised on not "just controlling or comprehending the world" but "freeing human beings from their dependence upon it". One may interpret this statement in Marxist terms as encapsulating a "science of the artificial" (Simon 1996) that dealienates human beings from society and nature.

In *Educating the Reflective Practitioner* Donald Schön's proposes the notion that designerly thinking offers the potential to bridge a gap between propositional and actionable knowledge hinting at its capacity to reconcile multiple human interests and frames . He (Schön 1990: 15) argues that what differentiates the exemplary from the mediocre professional is their capacity to operate, in metacognitive terms, as *a designer in situations of indeterminacy*. Whether a professional is a musician, a psychotherapist, a lawyer, an architect, doctor: what defines exemplary practice in all fields is the extent to which a practitioner can show "artistry" or the the capacity to operate in situations of indeterminacy. Practitioners who possess "artistry" can solve complex problems "ill-structured", "messy" domains; or to use Barnett's term "complex" or "supercomplex" situations. Schön (1990: 13) models best practice in all professions on the activity of designers because their work foregrounds dialogue, improvisation and abductive logic. The highest form of design is where a practitioner is able to reflect on the frames of knowledge-in-action and reflect on the frames of reflection themselves (Schön 1990: 150). This is an idea that resonates strongly with Barnett's (2000: 18) notion of the importance of developing student dispositions that prepare them to understand "knowledge processes in different knowledge settings, exploiting knowledge possibilities".

Given the synthetic dimension of design, Schön (1990:18) logically places the teaching of artistry, or the designerly disposition at the center of *all* professional education. He maintains, moreover, that because learning in design is thoroughly dialogical it "cannot be taught by conventional classroom methods in terms of skills development or competence. But he does argue that artistry "can be learnt"

as a set of dispositions, in what he terms the “reflective practicum” (Schön 157 -168), a space that unites various forms of human interest within it. For Schön (as cited by Waks 2001: 44), crucially, “design is learnable but not didactically or discursively teachable: it can be learned only in and through the practical operations of frame experimentation”.

Conclusion: the new university and designing social futures

Nigel Cross (2007 17- 18) suggests, in his seminal work, *Designerly Ways of Knowing*, that the university is generally split between scientistic interest (the Sciences) on the one hand and hermeneutic/emancipatory interest (the Humanities and the Arts) on the other. He contends that design supplies the third missing leg or I would argue the catalyst, as it were, to establish a dialogue between these two sets of dominant interests in higher education. If, as Barnett asserts, supercomplexity, in contrast to complexity, is when we are faced with situation in which the number of variables intrinsic to it and extrinsic to it, outstrips our capacity to understand the problem, then design may offer the capacity to re-imagine the project of higher education in an age of uncertainty. Perhaps what Richard Buchanan (1992) has characterised as “wicked problems” is simply the attempt on the part of all human beings to synthesise multiple and conflicting frames in the learning process. Perhaps what “abductive” logic and wicked problem solving points toward is that fact that design is essentially the activity of learning itself: synthesizing human interests and relations within specific contexts and situations for specific purposes. What design, as a paradigm of learning, offers to higher education is that it through it the multiple and conflicting cognitive frames that produce situations of supercomplexity can become visible and thus open to contestability. Design provides the opportunities to visualize operable and epistemic frames in real time and space. In the design process, there is, so to speak, no ‘knowledge’ as such, only frames of interest and affordance which is a radically different take on the epistemological crisis facing higher education. Design is, in short, what human beings do when faced with situations of uncertainty or with intractably conflicting sets of interests. Perhaps a credible higher education for the 21st century would equip students with the wherewithal to actively “*design* their social futures” (Kress et al1996: 71).

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Short Biography

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SYNERGY BETWEEN FASHION DESIGN EDUCATION AND FASHION DISTRICTS

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Abstract

Cities, and their inner-cities, are in constant flux. One of the reasons for this is the need to address the social and economic conditions which have resulted from the decline in manufacturing and consequent increased levels of unemployment. Regeneration is a means of addressing this problem. It requires a creative and integrated approach and necessitates developing the cultural and economic foci and resources of the city. Furthermore, regeneration also requires collaboration with various stakeholders including higher education institutions (HEIs).

Internationally, cities' attempts to regenerate and restore their cultural and economic foci have resulted in the emergence of fashion districts, particularly in cities such as New York (NY) and Los Angeles (LA). Such fashion districts have generally emerged as a result of clustering. Clusters are networks of interconnected businesses relating to a particular discipline, such as fashion. Fashion districts incorporate numerous fashion-related activities and businesses, such as textile and trims suppliers, wholesalers, design incubators, manufacturers, designers, and fashion design educational institutions. International experience with fashion districts suggests that clustering may be beneficial to the sustainability of the fashion sector. In South Africa, a similar fashion district has emerged in the inner-city of Johannesburg. However, despite the benefits that such fashion districts may present with regard to the regeneration of the fashion sector, it is imperative that various stakeholders, including HEIs, work collaboratively with these fashion districts.

This need for collaboration is addressed in systems theory, which underpins this paper. The paper is located within the theoretical interplay of systems such as fashion design education and fashion districts. Systems theory suggests that all structures and components are linked together. The paper, based on a PhD study, aims to contextualise three inner-city fashion districts, namely NY, LA, and Johannesburg. The paper, therefore, describes the synergy between fashion design education and fashion districts within the theoretical framework of systems theory.

Key Words: *Fashion design education, fashion districts, clusters, regeneration, systems theory*

Introduction

Regeneration of cities and inner-cities has been high on the agenda of policy makers, urban planners, local authorities and researchers. Regeneration has been necessary in order to address urban decline due to diverse factors, such as the decline of manufacturing, increased unemployment, and the relocation of office space (Cachalia, Jocum & Rogerson 2004; Neal 2003). Consequently, cities and inner-cities are in perpetual flux so as to address the social, economic, political and environmental needs of urban areas (Gratz & Mintz 1998; Montgomery, Stren, Cohen & Reed 2004; Jenks & Dempsey 2005). Landry (2000:6; 12; 20; 48) takes the position that regeneration requires a creative and integrated approach and relies on collaboration between various stakeholders. Such collaboration involves sharing knowledge and solving problems based on open-minded, lateral and conceptual thinking. The stakeholders involved include policy makers, organisations, local authorities, and higher education institutions (HEIs).

Regeneration can be achieved by developing cultural-products industries and resources, economic foci as well as the local characteristics of the city (Landry 2000; Bertolini 2005; Scott 2004). Cultural resources are symbolic of local products such as crafts, manufacturing and services and are "embodied in peoples' creativity, skills and talent" (Landry 2006:19). Several authors (cited in Scott 2004:463) maintain that the cultural-products industry is pivotal to job creation and urban regeneration.

The fashion industry is part of the cultural-products industry and can thus be regarded as a driving force behind local economic development (Scott 2004:463).

In an attempt to regenerate and restore the cultural and economic foci of cities, fashion districts in countries such as New York (NY), Los Angeles (LA) and Johannesburg emerged as a result of clustering. Rogerson (2001:52) argues that inner-city regeneration is made possible through the support of an "incipient industrial district and the enhancement of a cluster" of similar enterprises. Clusters, sometimes referred to as industrial districts or semiotic neighbourhoods, are described as amalgamated groups of businesses or "networks of production units tied together in relations of specialisation" of similar or interrelated activities (Porter cited in McCormick 1999:1532; Scott 2006). These clusters become branded for specific disciplines such as fashion, arts, design and media. In addition, they provide a platform for discussion forums, a physical hub and a consortium of resources for similar production activities while also "creating, running, and maintaining design as a core element in the district's identity" (Koskinen 2009:4). Information sharing and knowledge creation and transfer occur within these districts because of the close proximity of businesses (Aage & Belussi 2008:481). This interweaving of similar businesses, production activities, information sharing and knowledge production appears to be located within a reciprocal systems interplay.

Despite the need for fashion districts, clusters and regeneration, it is imperative that various stakeholders, including HEIs, work collaboratively. "System-wide interdependencies", collaboration, and joint ventures are pivotal to regeneration and economic development (Scott 2006:12-13). Landry (2000:48) affirms the need for HEIs and local authorities to work in partnership in order to address regeneration. Scott (2006:5; 7; 11) also asserts that "private-public partnership" is essential both for vocational training and for drawing in a pool of skilled workers to facilitate regeneration. Furthermore, Scott (2006:8) argues that universities, design centres and research establishments are essential in order to support these clusters. It is thus evident that there is a need for fashion districts and HEIs to support each other and work together.

Design education, part of the higher education spectrum, can thus also be used as a tool for regeneration. Although design education incorporates various disciplines, this paper will focus specifically on fashion design. Aage and Belussi (2008:476) propose that fashion is a "cultural item" with "certain symbolic values" accepted by groups of people while Kawamura (cited in Welters & Lillethun 2009:xx) argues that clothes are "tangible material products". The fashion design process incorporates diverse fields such as design, merchandising, marketing, manufacturing and business. In this context, manufacturing refers to the production of end products relating to clothing. This particular manufacturing sector is often referred to as the apparel industry or apparel manufacturing.

Scholarly literature relating to fashion districts tends to focus on urban, social and economic perspectives, but there is a lack of literature addressing the synergy between fashion design education and fashion districts through the lens of a systems approach. In view of this gap, this paper, based on a PhD study in progress, aims to contextualise three inner-city fashion districts namely NY, LA, and Johannesburg. Furthermore, this paper describes the synergy between fashion design education, offered at HEIs, and fashion districts within the theoretical framework of systems theory. Systems theory implies that all elements are inter-connected and places particular focus on the input and output of any phenomena (Banathy 1992:10; 28-29). Within this context, input refers to the contributions of both fashion design education and fashion districts. Outputs relate to the regeneration of inner-cities, the establishment of fashion districts and the sustainability of the fashion sector. This interplay of systems however requires that all entities are locked together in a grid of complementary, harmonious, and interdependent relationships. This suggests that there ought to be a synergy between fashion design education and fashion districts.

This paper is divided into two sections. The first section aims to contextualise the three fashion districts, namely NY, LA and Johannesburg. The second section describes the affiliation between fashion design education and these fashion districts from the perspective of a systems approach.

Fashion districts

The need to address regeneration within inner cities as well as the need to sustain the fashion sector resulted in the emergence of fashion districts in cities such as NY, LA and Johannesburg, as a result of clustering. This section contextualises these three inner-city fashion districts.

NY Fashion District

The NY Fashion District materialised because of consumer demands in the United States (US) for ready-to-wear apparel manufacturing to accommodate the mass market (Rantisi 2002:592). Furthermore, as of the 1880s, the influx of mainly Jewish and Italian immigrants from Southern and Eastern Europe contributed to the emergence of the NY Fashion District (ibid). This influx brought with it a specialised workforce, coupled with cheap labour, and resulted in the centralisation of the fashion industry within the New York City (NYC) region (Helfgott cited in Rantisi 2002:592). Originally, the fashion industry was located in the Lower East Side of NY but retailers and manufacturers relocated northward. This relocation provided manufacturers with the opportunity to acquire showroom spaces in which to present their work while, at the same time, being close to buyers (Rantisi 2002:592). By the 1920s the initial NY Garment District (currently known as the Fashion District or Fashion Center) was firmly established in the "western half of Midtown Manhattan" (Rantisi 2002:592).

According to Rantisi (2002:592) and The Fashion Center Business Improvement District (FCBID) (2010), the NY Fashion District, in downtown Manhattan, is bordered to the "north by 40th Street, to the south by 34th Street, to the east by Fifth Avenue and to the west by Ninth Avenue". The district includes a number of fashion related businesses including apparel manufacturers, textile mills, button and trim suppliers, accessory and jewellery showrooms, wholesale and retail shops, forecasting services, buying offices as well as two major fashion design schools, namely the Fashion Institute of Technology (FIT) and Parsons School of Design (Rantisi 2002:589; 594). In total, there are 4271 tenants, including fashion designers, wholesalers, suppliers, office professionals, architects, graphic designers, information technologists, artists and theatres, located within the Fashion District (FCBID 2010). Additionally, there are numerous restaurants and 24 hotels either in operation or in the process of development (FCBID 2010). This agglomeration of related activities has ultimately created a culture of local production and synergy (Rantisi 2002:589).

The FCBID, launched in 1993, is tasked with providing services to support the Fashion District's real estate and tenant communities. The FCBID works in collaboration with "property owners, tenants" and the NYC to "improve the quality of life for all who live, work or do business" within the Fashion District (FCBID 2010). The FCBID is also responsible for promoting the Fashion District, creating a safe and clean environment and managing programmes such as the Fashion Districts Arts Festival, Kite Flight, the Art Space and the Homeless Outreach programme (FCBID 2010).

These FCBID initiatives have possibly contributed to the success of the NY Fashion District. The apparel industry has maintained its position as the principal manufacturing sector, in terms of employment, within the NYC region despite enduring decline over the past three decades (Rantisi 2001; Rantisi 2002). The NY Fashion District continues to be successful despite local and global challenges (Rantisi 2002:588). Moreover, this particular Fashion District continually refurbishes itself due to its variety and openness to new ideas and practices. This is evident on the Lower East Side of Manhattan, where an alternative cluster attracts young, free-spirited, creative and "predominately foreign born" designers due to inexpensive studio space and a "unique mix of social and art-related communities" (Rantisi 2002:596-598).

LA Fashion District

Within the central business district of LA, there are designated areas concentrated on specific disciplines including fashion (Scott 2006:9). This designated fashion area focuses on apparel manufacture and fashion and was previously known as the LA Garment District. In 1996, property owners formed the first Business Improvement District (BID) along with the establishment of the LA Fashion District (Holter 2002:49). Currently, the LA Fashion District extends over 100 blocks in downtown LA, broadening from "7th Street on the North, Santa Monica 10-Freeway to the South, Spring and Main Streets to the West and San Pedro Street to the East" (LA Fashion District [n.d.]).

Pool (cited in Holter 2002:49) notes that the LA Fashion District declined in the 1990s but subsequently re-emerged. The LA Fashion District BID works in partnership with City officials and service departments to maintain and restore the Fashion District (LA Fashion District BID 2006:19). In an attempt to re-establish itself, the LA Fashion District underwent major transformation, moving from

dilapidated factory buildings to becoming a renowned fashion district with a "bazaar-like" ambience and becoming the "locus of upscale production and showroom activities" (Scott 2004:479).

The LA Fashion District houses various "textile establishments including fabric houses, trim shops and pattern and sample makers" (LA Fashion District BID 2006:11). Additionally, there are a number of designers, "manufacturers, wholesale distributors, importers, exporters and design schools" (LA Fashion District BID 2006:11). These design schools include the Otis College of Art and Design and the Fashion Business Incorporated. Although the LA Fashion District houses several fashion related organisations, there are also a vast number of housing units, restaurants, art galleries as well as the flower district (LA Fashion District BID 2006:9-11).

As a result of this fashion cluster, the LA Fashion District is regarded as the creative nucleus for the fashion industry within this region (LA Fashion District BID 2006:11).

Johannesburg Fashion District

The NY and LA Fashion Districts have served as a model in South Africa since a similar fashion district emerged in the inner-city of Johannesburg.

The inner-city of Johannesburg has been the location of clothing manufacturing for more than a century but has endured massive decline in recent years (Kesper 2003:87-88). The decrease in the number of clothing manufacturers, elevated levels of unemployment within these sectors, scarcity of skilled workforce and increasing labour costs, have led to this decline (Rogerson & Rogerson cited in Cachalia et al. 2004:532). The City Council of Johannesburg has taken measures to address this decline and regenerate the inner-city of Johannesburg (Cachalia et al. 2004; Rogerson 2006). Regarded as the "seedbed for fledgling entrepreneurs", and the preferred "economic activity to secure incomes" and job creation, the Johannesburg fashion industry is a vital role player in economic regeneration (Kamaha 2004:426). Organising and managing economic development initiatives in the Johannesburg City are delegated to the Johannesburg Development Agency (JDA), an organisation of the City of Johannesburg (JDA [n.d.]). One of the initiatives of the JDA is the Fashion District project which includes promoting the sustainability of the fashion sector and the development of the Johannesburg Fashion District (Rogerson 2006:221).

The Fashion District aims to create a "safe, secure, attractive and functional district; to afford access to social and economic activities; and to maximise economic growth" (JDA [n.d.]). The Fashion District Institute, funded by the JDA, has been assigned to "take forward the long-term development of the fashion district with the vision of becoming the locus of the fashion capital for Africa" (Rogerson 2006:226). The Johannesburg Fashion District as the "fashion capital for Africa" is to encompass, foster and encourage the diversity of design concepts and contributions of both "non-South African, as well as South African designs" (Rogerson 2006:226). Non-South African design concepts are the result of the influx of immigrant clothing entrepreneurs from neighboring African countries (Cachalia et al. 2004:533).

The Fashion District, symbolised by its "new paving, lightning and sewing emblems", expands over 26 city blocks on the eastern end of the Johannesburg City center, bordered by "Jeppe, End, Commissioner and Von Weilligh streets" (Dawson & Davie 2004; JDA 2011). Within the Fashion District, there are over 200 fashion-related businesses including manufacturers, a budget clothing retail industry, established fashion designers, SewAfrica House and the Fashion Kapitol (JDA [n.d.]; Rogerson 2006; JDA 2011). The Fashion Kapitol, a square in the district, consists of an open-air fashion ramp, a small amphitheater, 30 shops, and a walkway connecting Pritchard and Market streets (JDA 2011:1). The Fashion Kapitol was officially opened on the 15 February 2011 in conjunction with the opening of the annual Joburg Fashion Week (JDA 2011:1). Unlike the NY and LA fashion districts, there are no design schools located within this fashion district.

SewAfrica House is a project aimed at becoming the core of African design; it promotes a uniquely African fashion design identity (Rogerson 2006:226). Located within SewAfrica House are SewAfrica Training Center, and design incubators. SewAfrica Training Center emerged due to research conducted between 1999 and 2001 which established a need for support structures to address training in terms of technical and business skills within the Johannesburg Fashion District (Cachalia et al. 2004:536-539). The design incubators, on the other hand, are studio hubs where young emerging

designers can rent out spaces equipped with specialised machinery and equipment, exhibition sections and dressing facilities that are necessary for the fashion industry (Rogerson 2006:226). Studio hubs provide the "starting point from which designers can launch their career in the fashion industry" coupled with the advantage of being located within a cluster of similar activities (SewAfrica cited in Rogerson 2006:226).

In light of the above, fashion districts such as NY, LA and Johannesburg demonstrate that there are benefits associated with clustering of interrelated entities. This authenticates the theoretical underpinning of systems theory wherein collaborative and interdependent relationships are essential.

The relationship between fashion design education and fashion districts

Landry (2000:48) argues that there is a need for HEIs and local authorities to work in partnership. This affiliation could also extend into fashion design education and fashion districts. This section highlights the relationship between fashion design education and the NY, LA and Johannesburg Fashion Districts.

The fashion design process is diverse and includes design, manufacture, pattern technology, computer aided design, merchandising, marketing, and business related activities. International and local HEIs offer formal qualifications in fashion design with a curriculum that accommodates the varied fields of the fashion design process. The fashion design curriculum is both vocational and theoretical in nature. This implies that there is a combination of "knowledge, skill and judgement" (Guile & Okumoto 2009:22).

Within the context of the NY Fashion District, in a study conducted by Rantisi (2002:594), it was established that 70% of the designers located within the Fashion District obtained formal training from design schools/HEIs located within the NYC region. These HEIs, located within and around the NY Fashion District, include the Parsons School of Design, Pratt Institute and the FIT. Fashion design education offered at these HEIs "ensured a steady supply of skilled" workforce thus supporting the sustained levels of employment within the NY Fashion District (Scranton, as cited in Rantisi, 2001:4). These HEIs also provide the platform for "key social networks with the industry" and train students to design products that are creative, "easily produced, reproduced and marketed at an affordable cost" (Rantisi 2001:7). In interviews with the heads of two of the largest local fashion design programmes in NY, Rantisi (2002:594) established that "merchandising is a key element and distinctive strength in the NYC fashion design curriculum. This is reinforced through strong school-industry links, via internships and guest lecturers by industry heads" (ibid). In an interview with the internship director at FIT, Rantisi (2002:594) found that approximately 45% of design graduates find employment with companies where they did their internship.

In addition, these HEIs work in partnership with local designers and FCBID initiatives. 'Tools of the Trade', an economic development initiative by the FCBID in conjunction with FIT, offers a series of business related seminars (FCBID 2010). In Spring 2010, this programme focused on sustainable business practices in response to 'going green' (ibid). In Summer 2010, the 'Fashion Center Sidewalk Catwalk' promotion, presented by LF USA, a member of LI & Fung Limited, held an art exhibition to promote the Fashion District as a "world fashion capital" (FCBID 2011:6). This art exhibition featured mannequin art pieces created from waterproof materials by thirty designers from the NY Fashion District and two student design teams from FIT and Parsons School of Design (FCBID 2010; FCBID 2011). The FIT Costume Institute libraries house "old design sketches" and designers from the district are allowed to view these sketches for design inspiration (Rantisi 2001:7). It is thus evident in the NY Fashion District that there is a co-dependent relationship between fashion design education and the Fashion District.

Similarly, located within or adjacent to the LA Fashion District is the Otis College of Art and Design and Fashion Business incorporated. These institutions offer training in both design and merchandising (LA Fashion District BID 2006:11). Alumni and students from these institutions "provide a constant flow of creative ideas" into the LA Fashion District (LA Fashion BID 2006:11). Fashion designers and students collaboratively generate a creative location within the LA Fashion District which is considered to be "one of the most important creative centers" of the fashion industry in the US (LA Fashion District BID 2006:11).

In the Johannesburg context, an example of collaboration between the fashion district and HEIs can be found in the case of SewAfrica. In order to address training needs within the Johannesburg Fashion District, SewAfrica Training center required additional support structures in terms of materials and trainers. The Clothing Technology Department at the former Technikon Witwatersrand, a public HEI located in Johannesburg, was identified as a support partner to provide "materials and trainers" to support the SewAfrica Training Centre (Cachalia et al. 2004:540). This department is currently known as the Department of Fashion Design at the University of Johannesburg (UJ). The Department of Fashion Design at UJ assists in the provision of skills training at the SewAfrica Training Centre. In the past, students registered for the Baccalaureus Technologiae (BTech) qualification as well as graduates lectured at the training centre (Weber 2004:104), although this is no longer the case. It is now only graduates from UJ who lecture at the center and these graduates are equipped with the knowledge and skills required to address the needs of the SewAfrica Training center where the curriculum content is both theoretical and vocational in nature.

Despite this, the JDA (2004:35-36) maintains that there is a need to further strengthen the affiliation with the Department of Fashion Design at UJ. While, the utilisation of students and graduates from UJ is one way of contributing to the Johannesburg Fashion District, a survey conducted by Rogerson (2006:234) revealed that the majority of the designers located in the district's design incubators received formal qualifications in fashion design from various other South African HEIs. This signifies that fashion design education is supplying a specialised skilled workforce to the Fashion District.

In another effort, African Fashion International, owners and organisers of the Joburg Fashion Week, in partnership with South African retailer group Foschini and the Fashion Kapitol hosted a graduate day entitled Fastrack (JDA 2011:2). Fastrack is "a development day that will not only showcase young designers, but will also provide an interactive platform with educational and informative activities" (Leisegang cited in JDA 2011:2). Several young emerging graduate designers from design schools across Johannesburg showcased their designs at the Fastrack event.

The above examples highlight that there is synergy between fashion design education and fashion districts. This corroborates the theoretical underpinning of this study, namely systems theory, implying that there are interdependent and collaborative activities between fashion design education and Fashion Districts. Such synergy is necessary to: 1) facilitate information sharing and knowledge production, 2) contribute to regeneration, 3) address the decline in manufacturing, 4) support economic development and, 5) ultimately support the sustainability of both fashion districts and the fashion sector. Therefore, fashion design education and fashion districts cannot operate in isolation or in opposition as this will not support these five fundamental elements of synergy.

Conclusion

It is apparent from the discussion in this paper that regeneration is possible by focusing on the cultural resources and economic foci of a city. In cities such as NY, LA and Johannesburg, the fashion sector is regarded as a cultural resource and economic focal point as well as a force for economic development and job creation. The fashion sectors in NY, LA and Johannesburg, traditionally located within the inner-city, faced the prospect of massive decline over the decades. In order to address this decline, regeneration efforts were implemented so as to maintain the original location of the fashion industry and ultimately ensure the sustainability of the fashion sector. It was thus that fashion districts in cities such as NY, LA and Johannesburg emerged.

These fashion districts, however, require a systems approach of interdependent, collaborative and symbiotic relationships with various entities including fashion design education. Although there is a synergy between fashion design education and the NY, LA and Johannesburg Fashion Districts, a problem exists with regard to further strengthening this synergy so as to foster greater economic regeneration and the improved sustainability of the fashion sector.

The literature suggests that there are two major differences between the US and Johannesburg fashion districts. Firstly, the US situation reflects a stronger link between industry, local designers and fashion design education. This may be because some of the design schools are located within the fashion districts. Secondly, the literature indicates that the US fashion districts focus essentially on production for mass market consumer needs but lack a distinct and unique design identity whereas

the Johannesburg Fashion District aims at promoting a uniquely African fashion design identity. Against this backdrop, the following recommendations are posed within the Johannesburg context.

Firstly, there should be stronger links between fashion design education and fashion districts in terms of collaborative projects and guest lecturing in order to enhance shared learning and knowledge production. Secondly, fashion design education could perhaps assume a stronger focus on entrepreneurship across all levels of the programme. The curriculum of entrepreneurship could incorporate theoretical and practical approaches so as to better equip graduates with the knowledge and skills required to develop their own businesses. This will support some of South Africa's leading branding strategies such as, 'MADE IN SOUTH AFRICA', 'WEAR ONLY SOUTH AFRICA (WOZA)' and 'MADE IN MZANZI'. Finally, design modules could be underpinned by Africa, as a source of inspiration, as opposed to adopting a Westernised fashion construct. International fashion designers such as Jean Paul Gaultier and Donna Karen have looked to Africa for design inspiration and the Johannesburg Fashion District is in a unique position to promote the construct of an African fashion design identity and compete in the global market for status as a world Fashion Kapitol.

These recommendations could strengthen the synergy between fashion design education and the Johannesburg Fashion District since education provides the training for future emerging designers while the Johannesburg Fashion District provides an operational platform.

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Short Biography

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TRANSFORMATION ISSUES IN THE TEACHING OF ARCHITECTURAL DESIGN

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Abstract

As a teacher of architectural design in the first year of the Bachelor of Architectural Studies degree at the University of the Witwatersrand, I found that the attrition amongst certain groups of "previously disadvantaged" students was noticeably higher than amongst white students. It became my focus to empirically adapt my teaching to try to facilitate the potential for a successful outcome for all students. This paper describes the course before 2009, the pedagogical interventions that were made from 2009 to 2011 and the course outcomes. The interventions mainly consisted of practical reorganization, building up cognitive skills and academic behaviours. Current research should reveal whether or which interventions may have influenced the improved throughput.

Key Words: *architectural design, teaching, transformation, throughput*

Introduction

The term "transformation" as it is used in South Africa can be described as the changes effected in society to facilitate the equity of opportunities (implying not only access, but the opportunity to succeed) for all groupings in society (author's own derivation based on Wits policy documents [University of the Witwatersrand 2005]). Transformation in tertiary education became a primary focus after 1994, and racial equity has come to be considered as an indicator of success, as evidenced by the new SACAP transformation requirements for Architectural learning sites.

In the architectural profession, transformation has been slow, to the extent that the National Research Foundation (NRF) is proposing a specific inquiry. There are many reasons why admissions into Bachelor of Architectural Studies (BAS) degrees have not yet reached equity, clustered around issues such as earning power, perceived prestige and the fact that the few many people will never encounter an architect in their life. As a lecturer in architectural design, my more immediate focus has been the higher attrition rate amongst the "previously disadvantaged" selected students in my class, than amongst their white counterparts.

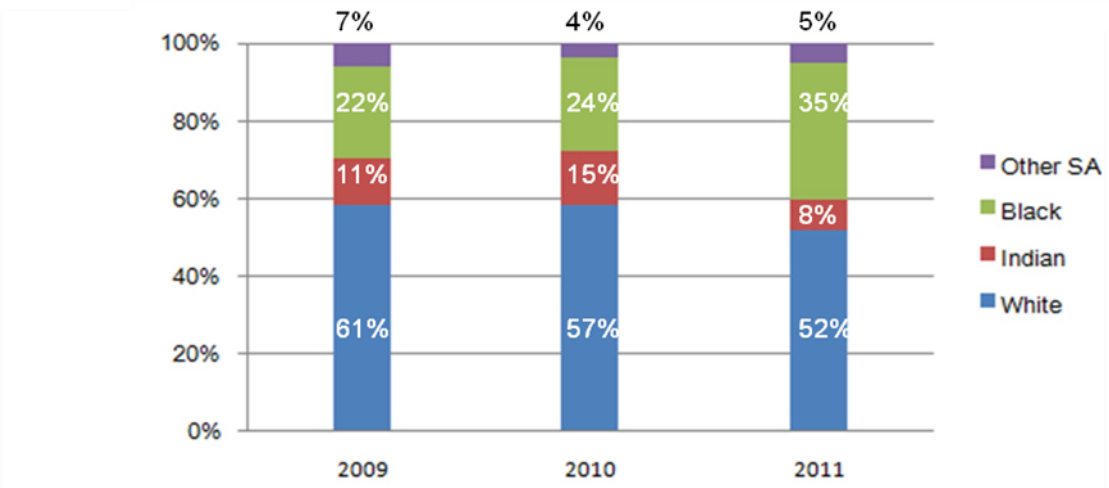

Figure 1: Demography of students registered for first year architectural design at Wits, 2008-2011

At the University of the Witwatersrand (Wits) in 2010, 75 students registered in first year architectural design class, of whom 18 (24%) were Black. At mid-year, 8 of the 12 students who were failing (75%

of the failures) were Black. All these students had come through a stringent selection process and many were students with high potential who were trying hard. Clearly, something was wrong.

It must be noted that in 2011 racial categories cannot be equated with educational advantage, class, or even, increasingly, with culture. However, a shift towards racial equity in throughput can be considered as an indicator of a generally more equitable outcome.

2010						
	Registered Students	**% of Total**	**Pass Semester 1**	**% of those Passing**	**Pass Semester 2**	**% of those Passing**
White	43	57%	40	63%	40	63%
Indian	11	15%	10	16%	9	14%
Black	18	42%	10	16%	12	19%
Other SA	3	4%	3	5%	2	3%
TOTAL	75	100%	63	100%	63	100%

Figure 2: Demography of student throughput in first year architectural design at Wits, 2010

In order to achieve equity within a profession, the critical starting point is equity in student throughput. A successful outcome in "Architectural design" is the best indicator of success in the BAS degree, as it incorporates and integrates all the students' other subjects. It also demands the greatest intellectual integration of abstractions. The question is: How can one teach design in such a way that successful outcomes are facilitated for all students?

Pedagogical model

The BAS degree is a gateway to a profession where standards are determined by the requirements of international practice and accredited by a professional council. This means that the required outcomes are not negotiable. We need to achieve the same outcomes by changing the pedagogy and possibly making the discourse more accessible, without replacing essential content. The present course requires 38 contact hours per week, so if one adds something new, something else has to go.

According to City, Elmore, Fiarman and Teitel's instructional core model (2009:15), student learning only improves if there are improvements in the course content, student engagement and teaching, and you have to change all three to effect any change. Wits's selection processes for BAS are aimed at identifying students with potential rather than evaluating them on their existing skills or background. This results in a richer and more diverse student body with a wider range of understandings, skills and experiences which are not necessarily the ones assumed in pre-1994 architectural teaching models. In architectural design one expresses meaning, values and understandings. Since these no longer come from a single shared culture, the basis from which students engage, has changed.

Prof Jonathan Jansen (2004:301) suggests that the current problem faced by South African urban universities is to "transform institutional cultures in ways that are more inclusive and accommodating of the statistical diversity of their student populations". Architecture's traditionally exclusionary and Eurocentric discourse is currently being challenged and revised in most South African universities. Wider histories of architecture and settlement are being taught, and the technical, cultural and economic knowledge-base and context of projects has become more diverse, changing the course content (Coetzer 2010; Saidi & Nazier 2011). It is still an open question whether this change is deep enough to challenge the profession's engagement with the cultural diversity of the South African community, but even so, course content as well as student engagement have changed, without a significant improvement in equity of throughput. This clearly indicates that our way of teaching also needs to change.

The first year design course until 2009

From 2006 to 2008, the first year Wits design course remained unchanged. When I started teaching this course in 2009, I basically took the given material and started to adapt it as problems became evident. In 2009 this was a moment-by-moment reflexive process which had to fit into the published

course outline. Between the end of 2009 and the start of the academic year in 2010, I could for the first time assess the throughput outcomes and make some adjustments for 2010, based on the experience of the past year, without time to research this formally. I introduced some additional interventions for students failing at midyear in July 2010, which I incorporated into the 2011 standard course.

What I am presenting in this paper is the transformation of the architectural design course from 2009 to 2011 and the outcomes to date. One cannot interpret this as cause and effect, as the formal research into the outcome-value of the pedagogical interventions in 2010 is still being conducted. This will be published in due course.

The design teaching model before 2009 can briefly be described as follows:

Selection process

We use a combination of selection processes to identify students with the potential to become successful architects, consisting of a graphic and written exercise (testing aptitude), a portfolio interview (testing attitude) and academic results, which show whether there is an acceptable academic foundation on which to build.

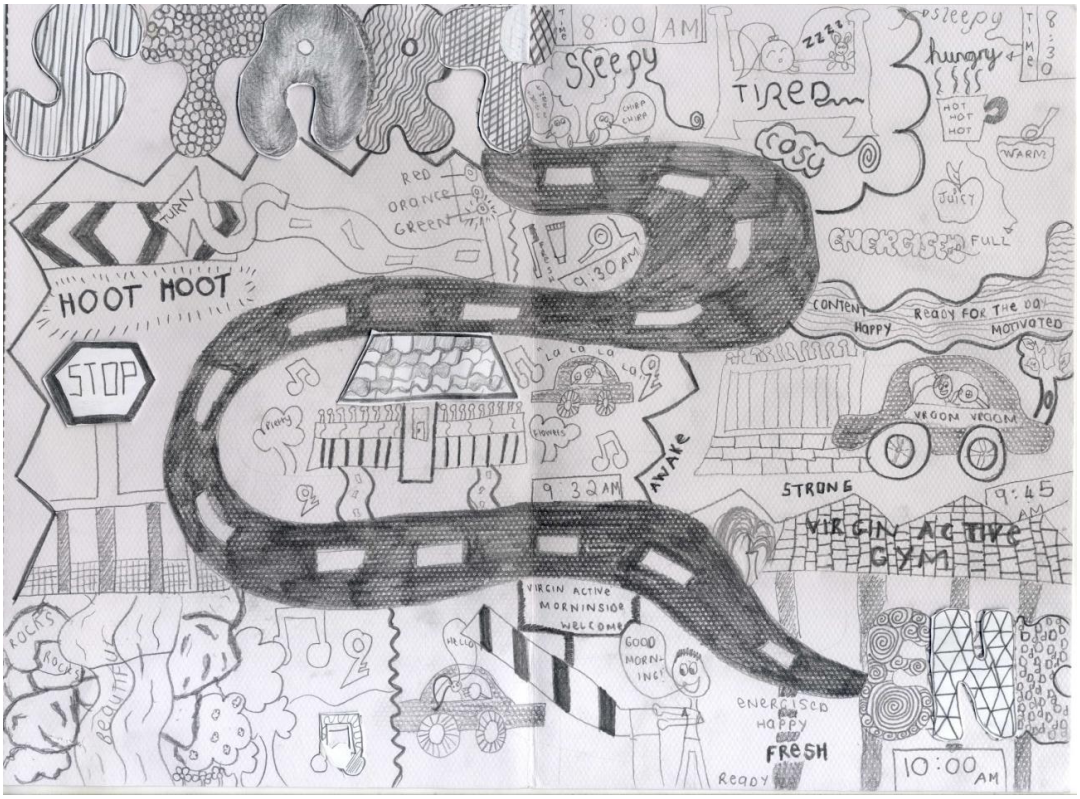

Figure 3: An example of one of the high-scoring graphic admissions exercises, in which applicants had to graphically represent, in pencil, a journey they undertook regularly

Selected students display the following attributes:

- they have temporal and spatial orientation, and the ability to translate this into graphic form
- they are observant, sensitive, aesthetically aware and care about what they do
- they are expressive, artistically creative, and reasonably logical
- they are committed, hard-working, excited about architecture and often set themselves high standards
- they have a reasonable basis in mathematics and can express themselves in English, but not necessarily understand it as well
- they have a rough understanding of what an architect does.

Course aims

The first year course in design aims to introduce the student to the creative process of architectural design

- introducing the student to the primary elements of architectural theory and design
- exposing the student to a broad spectrum of architectural themes, ideas and practices
- awakening the student's creative sensibilities
- sensitising the student to the social, cultural and physical environment and its influence on the built environment and vice versa
- encouraging the student to develop a personal critical viewpoint on architecture.

Required course outcomes

Through the use of standard graphic architectural conventions, free hand sketches, three dimensional drawings, artful presentation drawings, concept models, scale models, descriptive, creative and analytical writing and oral presentation the student must demonstrate the ability to;

- solve elementary design problems
- take design solutions through various stages of refinement
- interpret and understand architectural, social, physical and cultural dynamics
- clearly present appropriate architectural responses.

Course content

Before 2009 lectures and discussions covered the basics of space, the spatial envelope, the design process, concepts, scale, ergonomics, structure, context, materials, identity, formal considerations, memory and spatial meaning, conceptual integration, spatial communication through drawings and models, research and presentation.

Teaching method

Theory of design lectures consisted of a reasonably abstract discussion of theories around slides of buildings. Design assignments were issued using written briefs in which aims and outcomes were defined, the theoretical approach was specified and submission requirements were spelled out. Assignments were often broken up into sub-assignments with specified submission dates. The briefs expanded somewhat on theoretical and philosophical issues. The expectation was that students would integrate the knowledge and skills learned in other subjects into their designs by themselves. Readings (but no lecture notes) were issued, others were prescribed, but there were no set text books.

Students were expected to work in the studio and benefit from peer discussions. They each had a chair and a shared desk and access to the CAD lab. They had access to the library and were expected to make notes of their readings and observations in their sketch books. Once a week there was a "school talk" by an outside professional on architecture or planning practice or research, which they were expected to attend.

Two days a week were allocated for architectural design on the time table. These were generally spent on lecture attendance for the first two hours and critiques (tutor feedback) in the studio for the next 4 hours or more. The class was divided into tutor groups and every student was required to see a tutor to get feedback on his/her progress on the design assignment. This actually happened about once a week as there were 4 tutors for about 75 students. Ideally, all students were to participate in these discussions.

In practice, students generally attended the design lectures and attended the design studio until they had received feedback on their own design assignments, after which they left to work at home. They would listen to the tutors' feedback while waiting for their own turn, but few students actively participated in the discussion or actually worked in the studio. Some preparatory assignments (measuring, researching, etc.) were group assignments, but design assignments were usually individual.

On submission days, students presented their assignments to the class and received verbal feedback. The submissions were retained for marking by the principal design lecturer afterwards. Students' design research, development sketches and rough models were also submitted. Marks reflected

whether or not the specified assignment outcome(s) had been achieved. These design assignment marks were added up to obtain a semester design mark. At the end of the semester, each student had a portfolio oral exam in which they pinned up all their design assignments, showed their sketch books and were examined by a panel of tutors and external examiners who questioned them on their design thinking and reading. The assignment mark was moderated by this panel to reflect how well the required outcomes for the semester had been achieved.

In addition, students sat for a written examination in which they answered questions on design theory. During the year they had to write the occasional theory essay and sometimes presented research on architects and their work in the form of seminars. There were relatively few formal lectures on design.
In design assignments, presentation methods and formats were specified. This generally involved hand drawings and model building. Digital techniques were taught towards the end of first year, but not yet allowed in assignment presentations.

In 2009 when I started teaching this course, design theory (comprising discussions on different architects' approaches to design and an examination of precedent) was being gradually phased into the History course. The School had also recently had an accreditation inspection from SACAP in which they had recommended a better integration between design and construction.

Problems encountered in design learning

With this teaching model, these were some of the phenomena that were evident in assignment submissions, as observed and commented upon by teaching staff:
Some class groups had synergy and even weaker students' projects were improving, whereas other groups were static (Elaboration upon grouping strategies to follow).

Some students;

- did not really engage with the design process
- did not seem to have the basic language and drawing skills that are needed to explore, develop and present a design
- did not seem to understand how to produce the outcomes specified in project briefs, despite having attended lectures on all the required components
- did not seem to understand what a concept was and how to use it to integrate the different components of a design problem
- seemed to struggle to produce an end result, despite having had good ideas and enough time in which to develop them. They often changed concepts when they encountered problems in place of resolving them.
- displayed little awareness of the importance of the formal academic framework in which their studies are being conducted e.g. they did not pin up in time for deadlines, notify the university administration if they were absent because of illness, apply for deferred examinations in time, etc.
- were not familiar with urban and/or architectural spaces and their related spatial expectations.

Most students;

- feared experimentation and were more orientated towards achieving high marks than towards learning, as evidenced by students' questions,
- seemed to struggle with time management, as evidenced by incomplete or late submissions.

Possible causes for problems encountered

The following preliminary surmises were made about likely causes for these observed problems, matching the problem to known facts about students' backgrounds from class survey questionnaires, individual discussions with students, and demographic data from admissions records.

Some students

- do not know what is expected of them or what resources are available in a university environment, probably because they are the first in their family or even community to attend a university.
- do not follow abstract discussions or instructions in class, probably because English, the medium of instruction, is not their first language. They are seemingly fluent in English during essay-writing because they use the limited vocabulary that they do know, but do not understand assignment critiques.
- wait to be given instructions and told the answers rather than showing initiative, probably because they attended schools where they were expected to memorize and reproduce rather than to critically analyse problems and find solutions.
- think they have resolved a design when they have only addressed one aspect of the problem, probably because they attended schools where it was acceptable to do a project by reproducing information from one source instead of integrating information from different sources into a new, ordered whole.
- are overly concerned that their design is "correct" and are very hesitant to explore new possibilities, probably because their schools trained them by rote to produce high marks. They fear mistakes and avoid the learning experiences of criticism and unsuccessful quests.
- find it impossible to resolve a design problem, probably because they lack the drawing or writing skills to explore and test ideas too complex to just imagine. It takes a long period of putting in extra time to catch up on skills which require practice, during which time they are also designing more slowly and cannot test as many possibilities.
- struggle with time management, probably because they have little grasp of how long it will take to do a project as they have never done this before.
- have grown up in rural or economic circumstances where they probably have very little experience of urban spaces and complex building typologies.

Two other significant problem areas emerged:
Students who submit late or attend badly are sometimes in difficult financial circumstances which cause them to live far from campus. They cannot afford fast transport or drawing materials and end up working part-time in order to cover costs. This all takes time that they do not have and often leads to despondency.

Academic teaching is traditionally geared towards intuitive rather than sensing learning styles; conceptual rather than active learning styles; verbal rather than visual learning styles and sequential rather than global learning styles. The majority of undergraduate students tend to have sensing, active and visual learning styles. When teaching difficult concepts, it helps to transmit them in the way that can be most readily understood i.e. by addressing individual learning styles (Felder & Brent 2011).

Interventions and changes from 2009-2011

Approach

In teaching, it matters that each student is given the best possible chance of success. There is not time to fully research and ascertain causes before attempting to solve problems. The approach was therefore to use all the strategies that looked likely to be helpful, in the hope that some would produce the desired results, and later identify which had been effective.

Implemented interventions

The selection process, course aims and outcomes were not changed at all. The pre-2009 course remained in place with only the following implemented changes, which were mainly organizational or pedagogic.

General facilitation of learning

In order to maximise peer learning and assistance, I tried to facilitate student cohesion and contact in many ways.

I specifically compiled student project groups so that each group included students from different backgrounds, strong and weak students, mature students and students who had failed the previous

year. In 2009 students chose their own groups and that class has remained very segregated. In 2010, I did an alphabetic division but increasingly found that one group was lagging behind. It turned out that this quarter of the class had surnames starting with M, and were predominantly Black. There was less variety of approach in the group to spark new ideas, and there was too high a percentage of students whose schooling had not prepared them well for architecture. I reshuffled these groups in June 2010. Since 2009 we have acquired 4 post-graduate student tutors to assist the sessional staff in studios, giving a 1:10 staff:student ratio so that students who are struggling can receive more individual attention in the ordinary studio sessions and every student can discuss work twice a week.

Students who were obtaining less than 50% for assignments were specifically invited to additional workshops. The principle is always to offer this to the whole class to avoid identifying and stigmatising a "disadvantaged group". The invited students generally do attend, while the good students who do not want to miss out on anything also come, which provides good synergy.

I start the year with several interactive group projects to facilitate communication amongst students. We have always had a "memory box" design assignment in which students spatially communicate their personal histories. I scheduled enough time for every student to present his/her project to the whole class. The aim is to get to know one another better, to share the richness of one another's stories and to develop a more real view of the South African society in which we design. Both staff and students really enjoy this, and it gives me insights into students' backgrounds and possible solutions to learning problems.

Figure 4: First year design students participating in group activities. Left: A joint performance exercise with students from the University of Pretoria, (2010). Right: A practical workshop on size and scale, (2011).

We have been improving the physical studio environment year by year and have also been setting up fun projects in the studio at the beginning of the year to encourage students to work there. The improvements included new desks suitable for all kinds of work, enough lockers for most of the students so that they can safely leave personal belongings in the studio, magazine shelves, tables for communal cutting mats and a kettle. Students have a key to a store room in which we store projects and supplied butcher paper. In 2009 we suggested that students work in the studio, but hardly anyone did. In 2010 there were more. This year they have owned it to the extent that they want to repaint it themselves in order to be able to put their own graffiti on the walls. About half of the students work there as a group when they need to work late nights.

The first year studio is a thoroughfare for senior students and this has produced a very good synergy for the first years, who receive comments and advice and get to know their peers. Another positive development was that some thesis students volunteered to help mentor first years. The initiators of the scheme were disadvantaged students who had themselves felt the need of peer support. This

provides excellent bridging for students who are not familiar with a university environment. We can also match home languages in cases where students are struggling to understand English.

Bridging from pre-university to university

Research has shown that students who are ready for university learning should display key cognitive capabilities, key content, responsible academic behaviours and contextual skills and awareness (Conley 2008:6).

Architectural key content is a broad awareness of context which is mainly built up through observation; a sound foundation in Mathematics and preferably also Physics, and a good working knowledge of spoken and written English. Admissions procedures generally eliminate students who have a weak foundation in Mathematics. There are students who have passed matric English and even sound fluent, but struggle to understand abstract language or to write well. I try to demystify architectural language by explaining concepts in simple, everyday English.

I partially bypass incomplete comprehension by illustrating lectures very visually; by actually illustrating how things should be done through step by step examples, and making this visual content digitally accessible in the CAD lab afterwards.

There is however still an urgent need to improve students' language skills to a point where they can write dissertations and run projects in English. The Faculty introduced an "academic skills course" in 2010 which covered skills such as taking lecture notes, writing paragraphs and managing time. Architecture students did not find it specific enough to architecture to be very helpful. In 2011 an English lecturer was appointed to integrate a writing course with History and Theory of Architecture. Students received tuition and criticism in creative writing for their written History and Design assignments such as a memory box poem or a critical essay based on readings pertaining to the city. This has been very well received because the subject-matter has sustained their interest, and they see the relevance.

Drawing is another skill which some students lack. We introduce the importance of graphic communication at the beginning of the year and give students drawing exercises to do to start building up competence. I introduce design tutorials in which they do fast sketches, explore line weights and lettering, shading and texturing. By giving a high mark-value to the sketch book, we hope to cultivate habits of reading and sketching. Despite this, some students neglect this. I have also introduced weekly small, step-by-step tutorials to introduce and practice other practical skills such as model-building before they are required in design assignments.

We encourage unsuccessful applicants who want to reapply to spend their waiting year practicing drawing and reading in order to better equip themselves. More and more of our successful applicants are following this route.

We expose students to a wide variety of urban and spatial circumstances and many different buildings to enlarge their spatial vocabulary. The first city bus tour takes place during the introductory week, with two more excursions planned. At the beginning of most lectures I give a quick visual overview of a great building.

In 2011 I followed the example of the Urban Planning programme and used the first academic week to introduce students to University, the School of Architecture, studio culture and practicalities. This orientates them in a way that is applicable to this course, as the University's own school bridging initiatives are ongoing and take much time. This type of bridging builds what Conley describes as contextual skill and awareness.

Integrating subject learning

Since some theory seminars and essays have moved over into History of Architecture, there has been time to give additional lectures in the practical design considerations which are often neglected at traditional academic institutions, e.g. scale, privacy, security, ease of circulation, etc. It is important to show how this is applied in beautiful design examples.

I also give many more lectures that show how the theory learned in other subjects is understood and applied in good architecture, and then co-ordinate my programme with other subjects to specifically use knowledge they have just taught in the next design assignments.

We are increasingly running assignments across different subjects, e.g. in design we talk about structural principles and examples found in nature. In one tutorial students have to find a prototype in nature and sketch possible applications of this principle in architecture. They will then take these principles through into Theory of Structures and build a structure that uses this principle. They will then use this structural type to design a small pavilion as part of a larger design assignment.

Designs are often taken into Construction where working drawings are produced and design detailing is resolved and then re-assessed as part of the design project: did the concept come through?
We now require students to pin up work from Design, Construction and Representation for their portfolio oral so that we can assess whether they have applied the learning from one subject to the others.

Key cognitive strategies

Conley (2008:7) specifies that these include problem formulation and problem solving, research, reasoning, argumentation and proof and interpretation. I illustrate and apply these strategies in my lecturing by always explaining why and where a skill or learning will be applicable in the design process, how to arrive at an answer, how this logic works - but then I leave them to practice it by having to find their own answers. I do practical, real-life exercises such as building spaces out of desks to establish an awareness of size and scale, or to create a certain atmosphere. This bridges language gaps and also addresses the issue of active and visual learning styles.
I break down the first design assignments into small, sequential steps with submissions at each sub-step. This teaches students how to break down a complex problem into manageable chunks and then reintegrate the solution. It also shows us where students are struggling. In 2010 we did this as an additional design workshop; in 2011 we integrated it into the normal programme as a 3-day en loge.
By introducing a new outcome requirement in one design assignment, allowing students to learn from their mistakes, and then requiring the same outcome in the next assignment once they have learned to do it, does build confidence.

Conceptual development

The bridging into construction is done in the second semester. To counterbalance these longer projects, I introduced more shorter, conceptual exercises in the first semester. The 2011 year's design projects explore spatial characteristics, scale, basic measuring and graphic representation of buildings; ergonomic design; a multilevel excavated dwelling without furniture; spatial meaning and metaphor; a contextual design of a small house plus office on a real, steep suburban site with a view; a small community facility in a public space enhancing and embodying the identity of the city; a complex with a shelter, an artist's studio and residence and a public gallery in a large conservation area. They research the artist in question.

Academic behaviours

Finally, there are academic behaviours that need to be learned, which are described as self-awareness, self-monitoring and self-control of processes and actions necessary for academic success (Conley 2008:9).
I present first year design in a structured, disciplined way so that students experience what it entails to complete work on time while maintaining the habit of good attendance. This enables them to cope with the work load and provides a point to which they can return if their own strategies fail.

We are constantly reminding students that they are responsible for their own learning, and that our goal is to cultivate their design ability rather than to produce immediate results or good marks. We try to provide a safe space in which they can take risks, learn and grow faster, and we encourage experimentation.

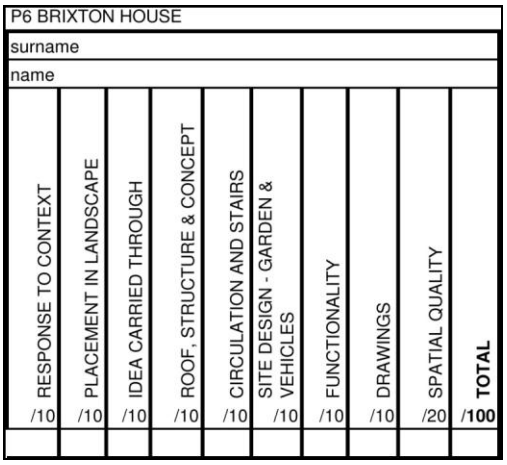

Figure 5: An example of a feedback rubric for a first year architectural design project.

We therefore give criticism that puts the good and the bad into a perspective and opens up possible choices rather than giving advice. Students always have to take and justify their own decisions. They have to stand by their choice and resolve it rather than restarting, which we facilitate through interim goals. I enforce a rotation of tutors for each new project to expose students to different viewpoints, personalities and even marking styles, but with standardised, detailed feedback sheets (figure 5) for each project and combined staff reviews of all marking to ensure fairness, transparency and learning.

Conclusions

Most of the attempted interventions were simple, organisational changes that make a big difference to the environment in which a student has to learn. In the case of students who are in actual fact disadvantaged in terms of their previous experience, this could make it possible for them to use their time and energy for assignments instead of negotiating frustrating detours, and make the difference between passing and failing. This probably makes less difference to a student who understands the university environment and knows how to make things work, while improved teaching approaches and better design projects probably enhance all students' growth as designers. This can only be confirmed through the proposed research.

The challenge has been to improve students' chances of successfully meeting outcomes without additional resources. If this is not sufficient, an extra teaching year will be necessary, as extra time will be needed with individual students, and there is no extra time available in the present first year structure. There has been a steady rise in the throughput rate of first year design students since 2009. This may be due in some measure to an increase in the potential of each year's group, but at least the aim of closing the throughput gap is being achieved. It seems likely that some of the interventions described in this paper have contributed to this outcome. At the beginning of 2012 groups from 2008, 2009, 2010 and 2011 will be questioned and focus groups will be conducted amongst staff to assess the effectiveness of interventions, and a model for facilitating successful design learning outcomes will be developed.

	2009	**2009**	**2009**	**2010**	**2010**	**2010**	**2011**	**2011**	**2011**
	Registered Students	Pass Sem 2	Through-put	Registered Students	Pass Sem2	Through-Put	Registered Students	Pass Sem2	Through-put
White	46	39	85%	43	40	93%	41	39	95%
Indian	8	4	50%	11	9	82%	6	6	100%
Black	17	13	76%	18	12	67%	28	25	89%
Other SA	5	4	80%	3	2	67%	4	3	75%
TOTAL	76	60	79%	75	63	84%	79	73	92%

Figure 5: Changes in the demography of student throughput for first year architectural design from 2009 – Jun2011

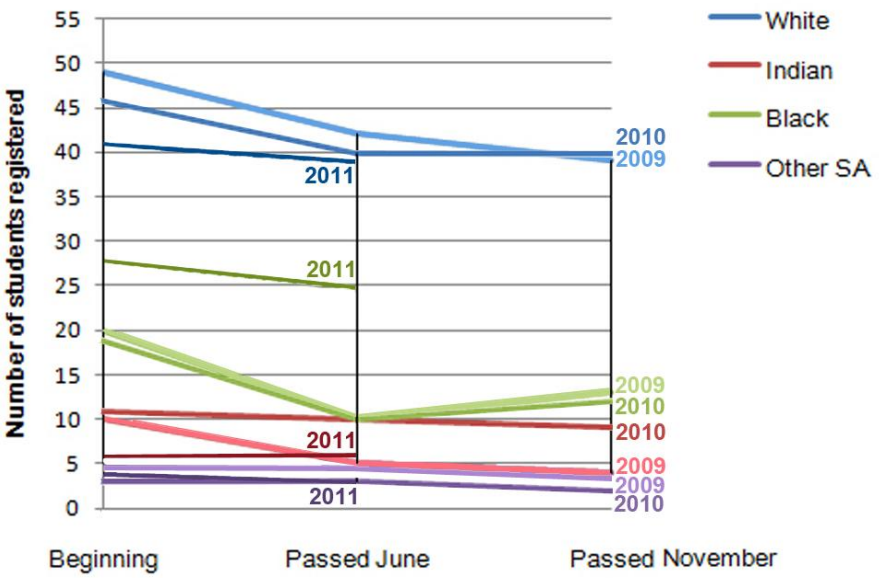

Figure 6: Changes in the demography of student throughput for first year architectural design from 2009 – Jun2011

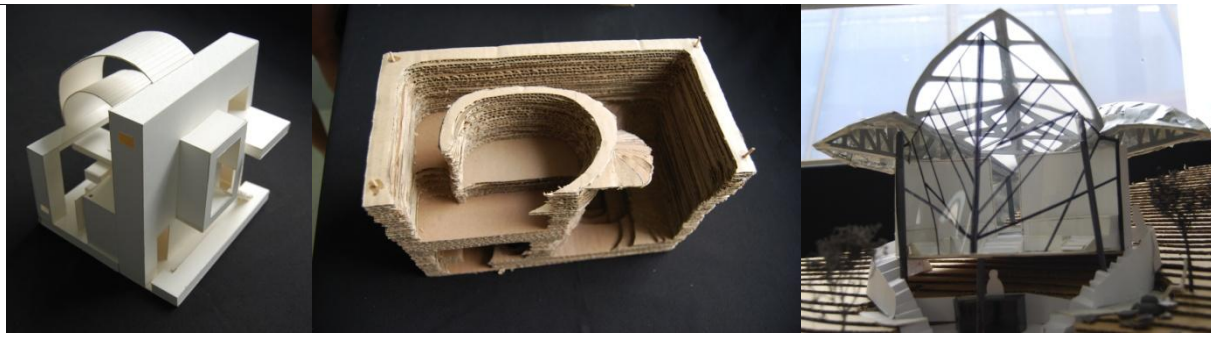

Figure 7 Examples of projects produced by first year architectural design students (2010) (LTR Montjane P2, Thomas P3 and Blumberg P5)

Acknowledgements

I would like to thank my colleagues Althea Peacock, Mohammed Munchi, Pedro Buccellato, Brendan Hart and Kirby Mania. Together we have struggled through these changes in the first year design course: It is who you are, as much as what you do, that is transforming this picture.

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Short Biography

Ariane Janse van Rensburg grew up in Pretoria and qualified as an architect at the University of Cape Town. After working for architects such as Peter Hattingh and Revel Fox, she opened her own practice doing domestic, educational and smaller institutional work. In 1993 she won a stained glass design competition and attended Pilchuck Glass School in the USA to train in glass painting under Debora Coombs. She has since also done commissioned glass work, exhibited and taught glass painting.

She joined the full-time staff of the School of Architecture and Planning of the University of the Witwatersrand, Johannesburg in 2008, where she attained her MArch (by research) on symbolic meaning in windows and is currently reading for her PhD in architectural education. She is a senior lecturer in architectural design and the undergraduate degree convenor for the architecture programme.

THE SOCIAL DIMENSION OF STUDIO SPACE: FACE-TO-FACE AND BEYOND - EXPLORING THE ONLINE LEARNER EXPERIENCE

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Abstract

There is wide acceptance that the studio stands central to architectural design education (Bakarman, 2003, 2005; Kuhn 2001; Forsyth., Zehner and McDermott 2007). It is a social environment (Gross, 1997; Chen and You 2010:152) which is characterised by communication, critique and collaboration. The studio is a physical place that facilitates pedagogy that supports community-centred instruction. It utilizes the theories of apprenticeship, social constructivism, socio-cultural theory of learning, collaborative learning, situated learning in communities of practice and enculturation.

However, the physical architecture studio, as we know it, is rapidly being transformed. Students spend less time in the studio and an increasing amount of time in computer labs. These spaces are not conducive to conversation and interaction - activities typical of the studio environment and necessary for critical thinking, ideation and design development. However, new ways to connect people and to nurture foster, and enable a sense of community are being presented by the Web. It provides possible ways to expand the existing traditional physical studio learning environment.

This paper presents work that is part of a current doctoral study by the author, entitled "The online architecture studio: towards an instructional design framework for design-learning." It reflects on the social nature, qualities and characteristics of contemporary studio learning, specifically related to the interactive and collaborative learning experience. It then proceeds to investigate how a similar social learning experience can be created online through a variety of tools such as Facebook, in teaching and learning. The learning context is one where students are involved in a fulltime final year of an undergraduate program in Architectural Technology at a University of Technology in South Africa.

Key Words: *architecture studio, online learning, design education, collaborative learning, Facebook for education, social media*

The architecture studio tradition

The architecture studio, as we know it today, originates from two past models, namely the Ecole Des Beaux Arts and the Bauhaus (Broadfoot and Bennett 2003:9). The studios at the Ecole Des Beaux Arts (1819-1914), known as "ateliers", introduced a pedagogical method that is still the focus of design and architectural education today. Broadfoot and Bennet (2003:10) describe how students were led by a tutor or senior students, in a "learning by doing" process.

In the period 1919 -1932 the concept of the design studio was reinforced by the creation of the Bauhaus by Walter Gropius. The Bauhaus program aimed to develop the students' personality as well as technical skills. Bauhaus students were either *apprentices* or *journeymen*. According to Broadfoot and Bennet (2003:10), Journeymen provided a link with professional practice outside the school. "What differentiated the Bauhaus was a tandem system of workshop teaching that attempted to equate craft with art, and equip graduates with as much technical expertise as theoretical and creative" (Broadfoot and Bennet 2003:10).

The architecture studio of today, characterized by "project-based work on complex and open-ended problems, very rapid iteration of design solutions, frequent formal and informal critique, consideration of a heterogeneous range of issues, the use of precedent and thinking about the whole, the creative use of constraints, and the central importance of design media" (Sarah Kuhn 2001:349), has not changed substantially from these historical models.

Studio as social learning space

> Learning is in the relationships between people. (Smith 2003)

Studio learning relies on the interaction between people. In fact, one of the main reasons of the success of studio teaching in design education is often attributed to its social nature (Gross 1997; Chen and You 2010:152)." The studio model has fostered the type of enculturation into practice that modern schemes for distributed situated learning are just coming to understand." (Schadewitz and Zamenopoulos 2009:1). The iterative design process calls for multiple opportunities of feedback and reflection, facilitated best by the student herself, a fellow student and staff.

Studio-based learning is traditionally situated in a physical design studio environment. Through a range of conversations (Pask 1976 in Laurillard 2008; Schadewitz and Zamenopoulos 2009: 2) or arguments (Hasirici & Demirkan, 2007) with themselves, their peers and tutors, students work towards producing a design proposal. This proposal is presented in the form of (process) diagrams, scale drawings in two and three dimensions as well as scale models and a verbal presentation. Such conversations or arguments take the form of various media including actions, words (written and spoken) and, most importantly, the sketch diagram.

These three relationships are presented in the work of Brown, Collins and Duguid (1988:23), as "reflection" (an internal relationship), "collaboration" (a horizontal relationship of peer to peer learning) and "apprenticeship" (Brown, Collins and Duguid 1988:23; Kvan, 2001; Lackey 1999, in Ellmers, Brown and Bennet, 2009), a vertical relationship. "In this sequence, apprenticeship and coaching begin by providing modelling *in situ* and scaffolding for students to get started in an authentic activity. As the Students gain more self-confidence and control, they move into a more autonomous phase of collaborative learning, where they begin to participate consciously in the culture. The social network within the culture helps them develop its language and the belief systems and promotes the process of enculturation" (Brown *et al* 1988:23).

Challenges and opportunities of the studio today

The physical dimension of the face to face studio is being challenged (Forsyth., Zehner and McDermott 2007:4; Broadfoot and Bennett 2003). In his report on the 2003 Studio Culture conference, Henderson (2004, in Ellmers 2005:2) highlights the increasing difficulty of higher education institutions to sustain vibrant studio culture. Studio in the traditional sense appears to be in decline. Factors contributing to this situation include "pressures on staff time, diminishing resources, increasing student to staff ratios, changing student work and study patterns, health and safety issues, and increasing reliance on computer aided design" (Ellmers, 2005:2) and hence more time spent in computer labs. These spaces are not conducive to interaction, collaboration and social constructivism associated with the constructing of meaning based on learning that occurs in a social environment.

With the rapid development of the Internet and information technology (IT) and the globalization of business design practices have changed. (Chen and You 2010: 151; Chen and You 2010:154) This is also true for architectural practice and consequently, architectural education. Ivala and Gachago (2010) maintain that individuals create learning contexts for themselves within and across settings (Barron 2006 in Ivala and Gachago 2010). Learning therefore extends beyond the studio, and increasingly off the university campus, resulting in more permeable boundaries between settings (Ivala and Gachago 2010).

Case study

The architecture studio in the final year of an undergraduate programme in architecture at a University of Technology was supported with a Facebook group, for a period of six months when the data for this study was collected. This medium of communication support was requested by the students whom all had access to the internet on campus, some at home and the majority via mobile phones. These students were also introduced to blogging and Skype crits and required to each create their own online portfolio of design work.

The objective of this study was to understand the impact of the Facebook group on learning, and to which extent this social media intervention has enhanced the face to face studio experience. The

transcripts of two student focus group discussions conducted by the University teaching and learning unit was studied to establish the degree to which this intervention provided for a social learning environment, beyond the physical studio. The focus groups on average comprised of six students each. These transcripts were reviewed in terms of the three key learning relationships (reflection, collaboration and apprenticeship) and resulting conversations, and with reference to related key themes identified in the literature on studio and studio culture.

One of the key sources consulted for this study, in addition to the student focus group transcripts, is the document that contains the responses of the Studio Teaching Project by the Studio Design Forum (Forsyth, Zehner and McDermott 2007:7). This Forum involved more than a hundred academics from Australia and New Zealand in discussion, on challenges and opportunities they encounter in studio teaching in architecture, art and design (http://www.theworldcafe.com).

The social dimension of online studio through the use of facebook

"The World Wide Web offers new ways to connect people and to nurture, foster, and enable a sense of community. It reflects on the social nature, qualities and characteristics of contemporary studio learning,
specifically the interactive learning experience" (Broadfoot and Bennet 2003:9).

Internet as a tool for mass communication allows for educational design studios to be expanded, supported and complemented online. The author does not argue for the replacement of the physical studio with entirely with online studios, but rather that a multi-modal approach be adopted. The online or *virtual* studio, as it is often termed, ideally involves a 'community' rather than isolated, one-on-one communication. Online studios are now perceived as an increasingly attractive support and supplement to traditional face to face studio teaching.

The *online design studio* refers to a networked studio, distributed across space and time. The participants are in various locations, and the design process and communication are computer mediated and computer supported. Often referred to as 'Virtual Design Studios' (VDS), they allow designers to be located anywhere yet still participate in collaborative work. There have been many varied formats in the relatively short history of online studios. The major differences often manifest themselves in the areas of communication and collaboration.

Social software enables communities to form and find each other (Brown, 2006:24), to learn through remixing, and sharing ideas and artifacts using the rich media now available. According to Roos (2011), the term "social network" has been around since the 1950s, but the dramatic rise of social-networking Web sites like MySpace, Facebook and Linkedin has "turned a dusty sociological phrase into the hottest buzzword of the Internet age").

Facebook, created in 2004 by Harvard student Mark Zuckerberg, is a Social Networking Site. Yudhi (2011) describes it as an "online community—a place where people can meet and interact; swap photos, videos, and other information; and generally connect with friends, family, co-workers, fellow students, fellow hobbyists and enthusiasts, and numerous others in their social network. Facebook connects people within cities or regions, work or school" (Yudhi 2011).

The use of Facebook in this particular study was mostly asynchronous. A closed facebook group was created and students posted requests to join, which were accepted by members already accepted to the group. Posts included organisational notifications, photos taken on field trips and in the studio, links to interesting and useful online literature and websites related to the current design projects, social comments and conversation, links to updated student blogs and online portfolios, with the invitation to comment, notification and reminders of face to face events, links to project feedback podcasts and marks. It was intended to support the face to face studio, and used in combination with occasional Skype crits and supported by online portfolios. It was not intended to be used as a learner management system, nor replace the face to face studio in any way.

Ivalo and Gachago (2010) who conducted the focus group sessions, maintain that "Facebook groups enhanced teaching and learning by improving communication between the lecturer and students, assisted in accessing academic and moral support from their lecturers and peers and improved the quality of their projects through feedback from students and lectures." Other significant findings of the

Ivalo and Gachago (2010) study are that Facebook was an integral part of the students' everyday life and that appropriate use of Facebook groups and blogs enhances students' engagement in learning activities of an academic and social nature on-and off-campus, by blurring the boundaries between students' academic and social lives. Facebook groups and blogs encouraged peer to peer support, collaborative learning, creation of student-generated content and improved interaction between staff and students, which are powerful indicators for student engagement.

Findings

The relatively limited published research regarding online design studios is often preoccupied with technology; consequently little examines the important issues of pedagogical content and student interaction (Broadfoot and Bennet 2003:9). Shao et al (in Schadewitz, N. and Zamenopoulos T. 2009: 2) argue that the level of social engagement in Social Network Sites (SNS) mirrors the practices and patterns of traditional design studios. In both settings, dialogue among peers and with tutors takes a prominent role. This study investigated the extent to which Facebook may enhance the three identified learning relationships and respective learning interaction by conversation.

a. Reflection

The first of three relationships and consequent discussions or dialogues presented in the work of Brown, Collins and Duguid (1988:23), is "reflection". It is an internal relationship (Brown, Collins and Duguid 1988:23; Kvan, 2001; Lackey 1999, in Ellmers, Brown and Bennet, 2009).

The concept of the 'reflective practitioner' outlined by Schön (1983; 1987) provides a framework for understanding and plotting the process of studio design practice and activity. Schön's (1983, 1985) theory is based on a constructivist view of human perception and thought processes; the designer constructs her view of the world based on her experiences (Valkenburg and Dorst 1998, in Elmers 2005:3). Through the iterative process (Broadfoot and Bennet, 2003:18) of exploration a design proposal is formulated.

The focus group provides no data on this internal process of reflection, which could have been expected, considering the social nature of facebook as a social media tool. In the facebook interface communication happens with at least one other person.

b. Collaboration

Interviewer: And has it [facebook] also helped in your interaction with fellow students?
STUDENT D2*:* Yes it has. No, yes definitely. It definitely has.
STUDENT G1*: "I think a large part of it (is) ... interactivity... you can upload a project or like post an idea and then people in our class could in this like electronic environment give feedback on it. "*
STUDENT A2: *For me it feels like we are still in a class and we are interacting, ja.*
STUDENT B2: *It's just a digital way. Digital classroom.*

Forsyth *et al* (2007:19) identified the following as important topics in response to the answer "What does Studio mean in your discipline": interaction, being together in a group, incidental learning, group and collaborative learning, students teaching students (peer-to-peer learning). Collaborative learning is learning that happens because of the conversation with peers; it is a horizontal relationship.

Collaborative learning is a process of enculturation that is supported through social interaction by members of a group (Brown, Collins and Duguid 1988:26).

Broadfoot et al (2003:18) present "a collaborative context" as one of the Four Conditions for Effective Contemporary Design Studio Education. This view is supported by a number of contemporary academics, including Kvan (2001). Jean Lave's theory of situated cognition focuses on learning as enculturation into a practice, often through the process of "legitimate peripheral participation" in a laboratory, studio, or workplace setting. Although this term is often thought of as equivalent to apprenticeship learning, it is a more general concept. Learning happens seamlessly as part of an enculturation process as the learner moves from the periphery to a more central position in the community.

Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Wenger: 2006). Social scientists have used

versions of the concept of community of practice for a variety of analytical purposes, but the origin and primary use of the concept has been in learning theory. Anthropologist Jean Lave and Wenger coined the term while studying apprenticeship as a learning model. They view communities of practice as a different kind of apprenticeship. The practice of a community is dynamic and involves learning on the part of everyone.

The theoretical construct of communities of practice (Lave & Wenger, 1991; Wenger, 1998, 2001; Wenger, McDermott, & Snyder, 2002) is grounded in an anthropological perspective that examines how adults learn through everyday social practices rather than focusing on environments that are intentionally designed to support learning. A community of practice is defined as "a group of people who share an interest in a domain of human endeavor and engage in a process of collective learning that creates bonds between them" (Wenger 2001:1; Grey 2004:22).

Lave and Wengers' (1993:63-64) model of situated learning proposes that learning involves a process of engagement in a 'community of practice'. The basic argument made by Jean Lave and Etienne Wenger is that communities of practice are everywhere and that we are generally involved in a number of them - whether that is at work, school, home, or in our civic and leisure interests. In some groups we are core members, in others we are more at the margins.

c. Apprenticeship

In an apprenticeship relationship, the student learns under a master by observing her behavior. This relationship is typical of the traditional studio tradition. It describes another of the Four Conditions for Effective Contemporary Design Studio Education that Broadfoot et al (2003:18) present, namely the *One-to-one dialogue* between teacher and student. This vertical dialogue is in the context of the student attempting to design, and may take the form of regular reviews during the design process. Both Schön and Kvan uphold that *one-on-one* communication is essential for exposure to the *tacit* knowledge inherent in designing, whether this occurs face to face or remote.

Cognitive apprenticeship (Brown et al 1988:26) describes the student to lecturer relationship (Brown, Collins and Duguid 1988: 25). Social interaction and collaboration play a central role in this sort of learning.

> Do you feel it [facebook] enhances the interactions with your Lecturer?
> STUDENT C2: *...there is a thing I like about it which is to communicate with the Lecturers. Because when you are working on your project when you get stuck on something you can post it on Facebook and you actually get feedback to move on.*
> STUDENTS: *Yes.*
> STUDENT G: *Definitely.*
> STUDENT I: *I think there's a better bond between the Lecturer and student whereas in the past it was very formal. It was like Lecturer student where now she's like a friend on the Facebook, so.*
> STUDENT C2: *Yeah quick feedback that's what I like, that's where it comes in.*
> STUDENT A2*: It's just like an open discussion, they are open to...*
> STUDENT C2: *It's like they [the lecturers] stand with us.*
> STUDENT C2: *And I think this is actually like making us gain confidence in our work, because actually you know where you are heading to and what is required from you.*

Conclusion

The findings in this study suggest that the online environment through facebook does provide a place for interaction, communication and dialogue. It promotes conversation, reinforces existing relationships and builds confidence. The internal, horizontal and vertical relationships are enhanced in a meaningful way, resulting in an engaged learning experience.

Through facebook students are drawn into a rich virtual learning community. It brings the academic work into the students' social world. It is passion-based learning (Brown, 1988), intrinsically motivated by the desire to become a member of that community of practice. Both formal and informal learning happens through rich dialogue on both the levels of peer to peer and student to lecturer. Reflection comes from being embedded in a virtual social "studio" milieu that supports the physical learning environment.

Facebook, however, does not function as a learner management system. Conversation is mostly informal and asynchronous, and the learning informal and unstructured. Future studies should

investigate the possibilities of using facebook as a synchronous tool where the group may agree to meet online at a particular time, possibly using google chat in conjunction with facebook so that the discussion may be more direct. The particular roles that students take on, particularly related to their learning styles, should also be investigated in order to learn more about the role of social media in the design learning process.

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ETHICS AND DESIGN RESEARCH AT SOUTH AFRICAN HIGHER EDUCATION INSTITUTIONS: A PROLEGOMENON

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Abstract

South African Universities demand of their lecturers, amongst other things, a burgeoning research track record. Such research is inevitably subject to the requirements of research and included in these requirements is that the research is carried out within the bounds of acceptable research ethical practice. Therefore, any research that emanates from Design programmes has to meet the mandate of such research ethical practice.

This paper sets out to explore what such a mandate might entail. It does not interrogate the ethics of design practice in general practice– there is an extant body of work in this domain -- but concentrates on how this necessity of research ethics might impact on the type and practice of research that is generated in Design programmes at tertiary institutions. In this regard it concentrates on Practice Based Research as this approach might apply to Design, because the basic tenets of Practice Based Research imply that it is in the specific design-making process that new knowledge might be generated. In essence there is research about a design, and there is research in and through design. The former might be seen as design critique, and this in not the focus of this exploration, whereas the latter will become the central area of investigation.

All research projects undertaken at South African universities require ethical consideration and clearance. (In the United States, for example, these projects are reviewed by Institutional Review Boards or IRBs). Based on the personal experience of the author (who serves on such an ethics committee) this paper will explore the major decision-making approaches to ethics in research in general and their epistemological underpinnings. In essence the paper will interrogate the basic principles of Non-Maleficence, Beneficence, Scientific/Scholarly validity and Human Rights. It will then lay these theoretical constructs out against the underpinning concerns of participant (and environmental) vulnerability, invasiveness, risk/benefit ratios and Informed Consent as these apply to research in the design arena.

It is acknowledged as a basic principle that Design as a practice is innately emergent in nature, and predominantly inductive in approach. This places great tensions on the control over ethical issues that might arise in the design research process (as regularly witnessed in the development of a research proposal, for example, for research design projects at tertiary institutions.) It is hoped that this paper, as a prolegomenon, might open these tensions out for debate and a possible development of a code of research ethical conduct in Design departments at tertiary institutions.

Key Words: *ethics, research, design, responsibility, participant, proposal*

Introduction

South African Universities demand of their lecturers, amongst other things, a burgeoning research track record. Such research is inevitably subject to the standard practices and procedures of research and included in these requirements is that the research is carried out within the bounds of acceptable research ethical practice. Therefore, any research that emanates from Design programmes has to meet the mandate of such research ethical practice.

A working definition of design might be the following:

> Design is the innovative conceptualisation of the optimal and aesthetic use of given and/or developing materials to solve problems in society, reshape society and/or improve society. This conceptualisation is presented in the form of an innovative, conceptualised blueprint with detailed instructions for manufacture .

> . . Design is not replication, not manufacture, and not for mere use . . . Design is innovative, criteria driven, fit for purpose (utilizing) the optimal use of materials. (Design) push(es) the aesthetic, material and conceptual limits (and by) experimentation . . . moving from the known to the unknown and testing it. . . (Design is) progressive, the opposite of replication, the step after the mastery of manufacture.[1]

The key concerns for this paper (which deals with the ethics of research) are captured in the following extract from above definition: "the optimal and aesthetic use of given and/or developing materials to solve problems in society, reshape society and/or improve society." As soon as an aspect of research engages with society, the research needs to engage with ethical considerations. However, the rest of the definition captures what might go into large sections of the justification of the decisions made in the design, bringing to a certain extent the design and product in line with the demands of research.

Any working definition of research would include the following engagements. The research should generate 'new knowledge' (which could include new insights, processes and technologies – perhaps clustered around the concept of 'epistemological gain'); the research process should be undertaken in a systematic way; the research needs to provide evidence for the findings captured in the 'new knowledge;' such evidence should be collected and 'manipulated' in a way that is acceptable to the research community; and to a large extent the research sets out to solve a delineated problem. Controversially, perhaps, is also the notion that the results of the research should be transferable, or 'generalisable.' It is to accommodate this 'demand' that one might attempt to avoid the seemingly universalising yet particularising notion of 'new knowledge' and supplant it with the concept of 'epistemological gain.' One could argue, given this reconceptualising, that the purpose of research is to get a 'better understanding of life' rather than simply a 'better product.'

The generating of 'new knowledge/epistemological gain' can (and usually does) follow an inductive process in design research. In other words the 'new knowledge' flows from, or, more cogently, 'emerges from' the exploratory and discovery process in the design making. Indeed, in most cases this is the trajectory of research for design, as shall be argued below. Alternatively the 'new knowledge' can be deductive in its approach, in that the extant theories are either tested against emerging data, or extant theories are used to explain and order emerging data. (In the definition on design, offered above, this latter concept would engage with the aesthetic, material and technological justification of the design, as captured in the research report). In both cases the notion of 'emergence' (either of theory or of data) is critical and makes the research process potentially risky, hazardous and unpredictable. It is the type of data that emerges, and the way that it is collected to provide the 'body of evidence' (that substantiates findings) that is the main focus of ethical consideration in research.

There is much debate as to whether the design product itself (as a representation of a final product that has been developed following a concerted and systematic process of innovation) can be seen as the equivalent of the research report. (Examples of this debate can be found in the articles contained in Barrett & Bolt 2009; Macleod & Holridge 2006; Gray & Malins 2004). The South African Department of Higher Education and Training currently has a working group interrogating how this might be assessed, so that design and art outputs from tertiary institutions might be incentivised in the same way that classical research article-type outputs are (namely through financial subsidy awards). However, at least in the formal qualification system of Masters and Doctoral degrees such a situation does at present not exist in South Africa. For these degrees a written research report has to be submitted for assessment. The origins of the research process and product, however, find their first submissions for scrutiny in the research proposal. Therefore, in as much as the research proposal is a cardinal part of the research process because this provides the justification for the research as well as the plan of action (the methods to be used and the design of the process to be undertaken) so the process needs to be ethically acceptable. This needs to be captured in the research protocol or proposal. In other words, the trajectory that the research is to follow in the gathering of data for the development of new knowledge needs to follow not only sound and acceptable research methodological strategies, but these strategies need also to conform to and take into consideration the ethical aspects during the process and along the way of the trajectory. Speculatively it is also argued (and expanded upon below) that the design itself needs to demonstrate engagement with ethical considerations.

[1] My thanks are extended to the working committee on the Focus Area of Computer Aided Design in the Faculty of Arts, Tshwane University of Technology for this definition.

Exclusions from the argument

Before turning to ethical matters, I wish to exclude from the discussion certain aspects that might fall under the broad category of 'ethics.' These exclusions are either governed by law, or are part of an institution's own way of doing things. It must, however, be remembered that these will also be taken into consideration in the adjudication of the ethical issues in research and therefore might be considered indirectly in this paper. The exclusions are the following:

- Plagiarism: Most universities have policies in place to deal with plagiarism and it is generally accepted that the use of another person's intellectual property for personal gain is not within the bounds of acceptable research. Indeed, it is outside the bounds of the law.

- Intellectual property: The matter of the protection of intellectual property is contained in the various Acts of Parliament that lay the foundation for the control of Copyright, Design (both aesthetic and function), Patents, and Trademarks. However, the matter of the protection of Indigenous Knowledge Systems (IKS) will not be addressed in this paper. Although there is an Act of parliament that engages with IKS it is a contentious and problematic area that often does not receive the necessary engagement by researchers.

- Also not included in this paper is the engagement with the implications (for tertiary institutional employees) of the Act on intellectual property generated at publicly funded institutions. This might be considered to fall under the rubric of 'institutional ethics,' as it is a matter between the institution (as representative of the country and therefore the tax payer) and the employee (in this case, the researcher/lecturer).

- A further exclusion is the reference to the adherence to Standard Operating Procedures (SOPs) where the law either requires the SOP or it is part of an institution's own set of SOPs. Although at first it would appear that SOPs are more relevant to the Natural Sciences, it can be argued that in the design process either the design has to take into account such matters as the handling of waste products for example, or the actual testing of the design will generate waste products – there are (or should be), for example, SOPs for the handling of waste from dye processes as these are potentially hazardous to the environment. As will become clear below, one of the areas of ethical consideration is how the researcher interacts with and protects the environment. Furthermore, where the design engages with building codes, for example, these are taken as a given in the ethical matters.

Finally, what is also not included in this paper is engagement with what might be called "institutional ethics." This branch deals with the running of an institution in an ethically acceptable way and, although it might impact on acceptable ethical behaviour in research[2], it is not the primary concern here.

It must be stressed that any assessment of a research proposal will take these matters into consideration. The point, however, that the article wishes to make here is that the matters mentioned are all governed by law or by regulation. Research Ethics, on the other hand, deals with matters that are not regulated in such strict way, but are cardinal in the morality of research practice, so to speak.

A working definition of Ethics for research

De Vos et al (2005: 57) provides one with a working definition of ethics for research:
Ethics is a set of moral principles which is suggested by an individual or a group, is subsequently widely accepted, and which offers rules and behavioural expectations about the most correct conduct towards experimental subjects and respondents, employers, sponsors, other researchers, assistants and students.

[2] An example of this is when a university sets up a Research Ethics Committee (REC) under the aegis of a Business Unit, and provides the Business Unit with an 'override power' over decisions made by the REC. In this case the threat of conflict of interest is potentially intense because the tension between ethical research and the possibility that this might provide obstacles to commercial gain for the university (the so-called "third stream activity") is ever present. RECs should be completely independent of such potential pressure.

From this a number of matters can be foregrounded. Firstly, ethics implies a 'set of behavioural expectations' – this speaks directly to the research methods and design of the research process. Secondly, the 'most correct conduct' (or behaviours) in this process is governed (or at least guided) by a set of moral principles that is generally accepted by the community. A large section of what will follow in this paper will engage with these moral (philosophical) principles as they apply to research in general, and, speculatively, to design research. These philosophical principles play out in practical principles (Wassenaar 2006: 69-73). Thirdly, the definition outlines many of the types of participants (over and above the researcher) who might be involved in the research project that is to be undertaken.

Although the origins of the application of ethics to research lie predominantly in the field of the natural sciences, the move to the social sciences tracked the changes from quantitative research methods to qualitative research methods, and also tracked the challenges made to colonialism. (Colonialism might be seen as a massive, oppressive and exploitative research project). In terms of the natural sciences the start of engaging with the ethics of research might be traced to (amongst other places) the horrific discoveries of research conducted on humans that were undertaken in the Nazi concentration camps.[3] This led to the Nuremburg Code, which was followed by Helsinki Declaration and Belmont Report from the United States. More were to follow. However, predominantly, the research undertaken on and with humans fell into the biomedical science domain and employed quantitative research methods. As the social sciences (such as anthropology, sociology and psychology) theorised that the world was not stable, but interpretable, the move toward qualitative research methods proceeded. This placed the human subject not simply as an object from which data could be gathered, or on which matter could be tested, but now as an active individual and participant in the project at hand. This notion, that the participant is both the subject of and the target for potential design engagements is critical. Furthermore, this positioned the researcher as an interpretative agent, undercutting the sense of objectivity of the researcher. Arguably this move also paralleled (but was not necessarily causally connected or even connected by correlation) to the move towards decolonisation and the recognition and entrenchment of the notions of Human Rights[4]. For the sake of the argument it is perhaps better to refer to Individual Human Rights, as, by and large, this concept forms the basis of research ethical considerations in South Africa.

Research ethical principles

Research ethics draws on four philosophical principles. These are (1) Autonomy and the respect for the dignity of persons; (2) Nonmaleficence; (3) Beneficence and (4) Justice (Wassenaar, 2006: 67-68). To this might be added the notion of 'scientific' validity. The first principle locates the dignity and autonomy of the participants as an inalienable right. In all research, therefore, the permission to enter into the space of the participants, to treat them with respect, and to preserve their autonomy is foregrounded. This principle forms the philosophical background to the notion of 'informed consent' and speaks to the right to anonymity and confidentiality for the participant. The matter of 'informed consent' will be taken up again later in this article.

Nonmaleficence (colloquially captured as the notion of 'do no harm') seeks to make sure that no harm comes to the participants as a result of the research. The potential for such harm should be considered both during and after the completion of the research activities. There are two critical concerns that are at play here. The first of these is that research has potential for 'invasiveness.' By this is meant that to gather information or to test matters, the researcher has to enter the space of another. Such an entrance ranges from the simple act of communication, through the provision of information that might be harmful in the public domain, includes the dangers of emotional or psychological invasiveness, and moves onto the more physical invasiveness that might go with drug testing and the like. The second concern works with this first one, and postulates the notion of the 'vulnerability' of the research participant. These two concerns are considered after the next principle.

[3] Although the Nazi experience is the most widely recognised, the Americans have also been involved massive unethical research projects. I would venture to suggest that most research generating nations have abused participants prior to the attention given to research.

[4] Other approaches include Virtue Ethics as espoused by Artistotle, Utilitarianism, as emanating from thinkers such as John Stuart Mills and Jeremy Bentham, universal values, from the work of Kant, and, lately, a strong emphasis on care ethics from feminism, and the concerns from post-modernism. For a useful trajectory through these approaches, see Rachels (2007) that deals with ethics in general, but is often used to engage with research ethics.

The Beneficence principle ('do good') engages with the ways in which participants might benefit from being part of the research (and indeed the ways the research might benefit society).

It is important to note that all research that requires ethical consideration is invasive in some form or another, and therefore these three principles are to be engaged with and balanced according to an ethical consideration of so-called 'risk-benefit' ratios. This implies that the risks to the participants need to be balanced against the benefits to the participants, which further implies (drawing on the 'autonomy' principle) that the participants should be suitably informed so that they can make a decision to participate (given the clear understanding of the risks and benefits). This cardinal matter, namely that the potential participants are given sufficient information so that they might independently consider the risk/benefit proposition and then come to a decision, is a cornerstone of research using human participants.

The final principle is encapsulated by the concept of Justice. As Wassenaar notes (2006: 68) "Justice in research is a complex philosophical principle, and in general it requires that researchers treat research participants with fairness and equity during all stages of research." These stages include recruitment, the intervention and its aftermath, and engage also with matters such as incentivisation, benefit, the lack of deception, and the community benefiting from the results of the research.

Philosophical principles to practical principles

To achieve these *philosophical* principles generally eight *practical* principles are used in the ethics considerations of research. In developing these Wassenaar (2006) draws on the work of Emmanuel et al (2004).[5] These practical principles include

(1) *social and scientific value* (that is to say, the research that is to be undertaken needs to be able to demonstrate how the results with benefit the community and the discipline);
(2) *scientific validity* (where the research follows acceptable research procedures and therefore the results are valid and reliable);
(3) *independent ethics review* (in that the entire process is overseen and approved as being acceptable, by an independent body);
(4) *Community and stakeholder engagement or Collaborative partnership* – in this sense the participants are fully engaged, and have granted permission to be fully engaged with the research;
(5) *fair subject selection* (where not only is the science of selection fair but the recruitment of the participants is also fair and non-coercive, for example);
(6) *informed consent* (in that all potential participants have been adequately informed so that they can make a fairly judged decision to consent to take part in the research or not);
(7) *favourable risk/benefit ratio*, in that the information provided to potential participants clearly indicates the risk to benefit ratio of their involvement in the research (and furthermore that the risk/benefit is favourable and fair); and
(8) *respect for participants* – this speaks to the practices of honesty, integrity and forthrightness on the part of the researcher towards the participants.

Participants

Given the above principles, and recalling the definition of design, it is perhaps useful to create a conceptualisation of who the participants in design research might be. Speculatively it might be argued that there are in fact two tiers of participants. On the first tier one would discover the interface among the 'client' (the person or organisation that commissions the design because they themselves do not have the necessary expertise to do the design themselves, for example), the 'consultant' (or designer in this case) and the 'contractor' (who would be the one implementing the design blueprint). Arguably, of course, the consultant and the contractor might be the same, but what is clear form this first tier are the ethical imperatives towards the client.

[5] Wassenaar's comment on this work is significant: "this paper presents a novel framework for conceptualising and operationalising ethical issues in research. It sets out eights General principles, and articulates several benchmarks for each. The framework matches the sequences of designing and implementing a research proposal and is more 'user friendly' to researchers than most ethical guidelines and philosophical principles" (2006: 79). See also Emmanuel et al (2000).

The second tier can be conceptualised around the participants who will provide the range of information that might be required to provide the optimal design for the situation. These participants might be users of products, spaces or processes, for example, or they might be clients themselves, who are determining market engagement or the pursuit of market edge. (Tangentially, there is a real ethical dilemma if the client's demands for the design require the potential acceptance of a client's own unethical behaviour – subliminal marketing, for example, or forms of deception. From a research point of view for tertiary institutions these are areas that highly contentious and contested).

The Role of the Research Ethics Committee

The rest of this article is structured in a particular way. The author serves on a Research Ethics Committee or REC (the international trend is to call these committees 'Institutional Review Boards' or 'IRBs') of a particular tertiary institution in South Africa, namely the Tshwane University of Technology. As such the article will be structured around the deliberations that might take place once a particular proposal (emanating from a particular design department or discipline) to do research is submitted for review and approval. It is important to note at the outset the central role that the research proposal plays in the process, as the ethics demands in research proposals in design are notoriously difficult to formulate, given the emergent nature of design as a process in and of itself, as well as the inductive process of design (and qualitative research in general). (This is one of the reasons for the generation of this article).

The role of the REC is to deliberate on the potential research to see whether in the first instance the research is scientifically sound. It is generally accepted that bad research science is ethically bad. (The word 'science' is used here to denote rigor, fairness, scholarship, a systematic approach and other hallmarks of accepted research process and not to point toward the 'traditional' view of 'science' as embedded in the 'Natural Sciences,' for example. It is perhaps more helpful to replace 'science' with 'scholarship,' but this replacement is not widely used in the literature, and therefore the notion of 'science' will be maintained). For this scrutiny the research proposal is central, as the proposal will justify the research, and will lay out the purpose and trajectory of the research, the places where data is to be gathered, the methods that will be employed to manipulate and interpret the data, and the process of the design.

The second deliberation is to whether the research impacts on the key areas of potential concern to the participants in the research, and how this impact is being managed. For this engagement the proposal needs to correlate with supporting documentation such as information leaflets and letters of consent, letters seeking permission to access participants, and the like. The third deliberation concerns itself with protecting the best interests of the university and what the university stands for and practises. In this sense the economic, the ethical and the reputational aspects are considered. Here the scrutiny is around matters such as intellectual property, the possibility of Serious Adverse Events occurring, and the like. However, the second deliberation overrides the concerns of the university – in essence the REC performs the task of the watchdog over research to protect the participants.[6] *Fundamentally the role of the REC is to act as a type of in loco parentis for the participants.*

The first particularly ethical consideration that the REC gives to the proposal is to whether the research that is to be undertaken engages with one or more of the three main categories of research participation namely humans, animals and the environment. In cases of the environment, by and large these will be covered by the SOPs and the law, but they need to be acknowledged in the proposal. In terms of design the most obvious example of the environmental concerns rests with Architecture, but any process that engages with or leads to waste material needs to be considered. Matters that concern the use of animals in research are normally forwarded to a specialist Animal Ethics committee.[7] More and more a fourth dimension is being added, one that is of particular importance to

[6] Most RECs at universities, for example, are constituted in such a way that they are independent of any potential interference into their deliberations by the rest of the research community, and they fiercely defend that independence.

[7] This researcher has indeed come across research with animals in a design setting – a student wished to design a range of jewellery accessories for pets, and so the testing of the products on the pets (including ear-piercing) needed to be approved. In Architecture, the design of animal enclosures might fall into this category, as an example, and it is feasible that similar considerations might occur in Interior Design.

design, and that is the impact on the cultural, and more specifically the notion of Indigenous Knowledge Systems or IKS. In this last case, although the predominant engagement in IKS is around biodiversity and the use of indigenous materials, the concern has spread to cultural practices. Although it can be argued that this falls within the domain of the human, it can also be argued that with reference to the human one is obviously dealing with the individual, whereas with the cultural one is dealing with a community – this warrants a separate category of consideration. Given these four categories, one observes that the most prominent one, and the one that will form the basis of the rest of the consideration, is the category that engages with the human.

Research ethics and human participants

This article now returns to the definition on design raised above, namely that design is: "the optimal and aesthetic use of given and/or developing materials to solve problems in society, reshape society and/or improve society." From a design perspective Fineli (2001) reformulates these concerns around the notions of designer as human being, designer embedded in culture, designer embedded in discipline and designer embedded in culture/society. Within these fourfold concerns, he posits the notion of the designer as a 'responsible person' (Ibid, 13)[8]. The nature of such responsibility is of course open to interpretation and can (and should) be addressed through moral and ethical philosophies. (The same can be said of the nature of the 'responsible person' serving in the RECs). Nevertheless, it is clear that the designer has a responsibility to engage with the "optimal use of given and/or developing materials" which would speak to the engagement with the environment, for example. The responsible designer also needs to determine (and perhaps justify) the aesthetic impact of the design on the society, culture and the environment.

From a research point of view, the engagement with the "problems in society," the "reshaping of society" and the "improvement of society" demand responsible approaches in gauging such problems, making decisions that will reshape and improve such society. Fineli (2001: 12, brackets in the original) speaks of the "necessary upstream (problematique) and downstream (impact) complexification of the design project." Here the two areas of ethical (responsible) consideration are foregrounded. In terms of the upstream, the responsible design research needs to engage with such data gathering processes (interviews, briefs, focus groups, other designs in similar situations, for example) that are to be done following standard ethical and research practices (many of which are contained in classic qualitative research methods guidelines). From a downstream point of view, the research needs to determine methods of assessing and enhancing the impact that the design might have, and to make decisions on this impact in a responsible way. Put another way, it is useful to conceive of the design process in two phases and each phase has specific ethical considerations. In phase one data is gathered that will inform the design process. Here the ethics of data gathering are at play, and this might correlate with Finelli's 'problematique.' In phase two, after the data has been gathered and manipulated to make conclusions, these conclusions are then used to make the design. In this phase, therefore, the ethics of design are at play. Firstly, the design should meet all the legal, regulatory and other criteria. However, very importantly, the design should meet the demands of the participants as far as possible, as it is they that have provided the information that assisted in informing the design. This speaks to the impact factor in the research/design.

Applying the eight ethics principles to design research

It is now useful to draw on the Wassenaar/Emmanuel eight principles to consider how these notions of 'problematising' and 'impact' might work.

Social and scientific value: The cornerstone of this principle lies in the notion of 'value.' As such, ethically, the researcher/designer would need to gather information from the particular society in an ethical manner, and use that information ethically. In this regard the researcher/designer would engage responsibly with the problematising process in the efficacy of the design intervention, and would need to determine responsibly the potential impact on the particular community for whom and about which the design is being undertaken. (It might also be considered that the 'value' would need

[8] Fineli (2001: 13) notes that such parameters of responsibility should be embedded in design education programmes and should engage with the various ethical matters encapsulated in theories around Virtue Ethics, Feminist Ethics, postmodern ethics, human rights ethics, Utilitarianism and the like. He calls this the development of "individualistic ethics."

to lie not only in the impact of the design, but also in the contribution to new knowledge and insight that the project might need to generate.)

Scientific validity: This aspect engages with responsible research and would require fair justification (problematising) and a clear indication or demonstration of comprehensive planning for determining potential negative impact (which speaks to the risk/benefit ratios as outlined below). It might also here be argued that the validity of the design would be determined by the way that the design contributed to the discipline. Although this seems not to be an 'obvious' ethical consideration, it speaks to the notion that 'bad research is ethically bad' which might in turn be 'translated' as 'bad design is ethically bad,' particularly in tertiary institutions. It is acknowledged that this is a contentious proposition.

Independent ethics review would refer to the responsible evaluation and confirmation of the research and the design process, taking into consideration the principles of non-maleficience, beneficence, justice and the like, both in the problematising data gathering process, and in terms of the impact assessment. It is perhaps this point in the article that is most important. The title of this article notes that this is a 'prolegomenon' – an introduction or start to the debate – and the plea made covertly in the article is that this debate be carried forward, perhaps even culminating in time in a 'code of ethics' for designers at tertiary institutions. An 'independent review board' might be the start of such a process.

Community and stakeholder engagement or collaborative partnership. This principle speaks to the responsible interfaces amongst the client, the designer and the community. The engagement is both in terms of the data gathering prior to design, and the assessing of impact (directly or indirectly) of the design on the stakeholder community and partnership. The principles of non-malficence and beneficence, coupled to the risk/benefit ratios speak to these deliberations, and would include the engagement with potential physical, emotional, psychological, economic and the like invasiveness. Furthermore, the findings of the research need to be shared in some way. Naturally, the design itself is shared, but should other findings come to the fore, such findings might need to be communicated to the stakeholders.

Fair subject selection. Although this matter is fundamentally a traditional research design concern, it does resonate in design research as well. Predominantly, in terms of responsibility, this would interrogate the potential problems of exploitation both in terms of data collection and in terms of the potential vulnerability of those who will bear the brunt of the impact of the design. It can, however, be argued that the commissioning of a design excludes the 'fair subject selection' concern because the purpose of the design is set by the commission, and the 'users' of the design are in fact embedded in the commission as well. Nevertheless, it is beholden upon the researcher designer to consider matters such as exploitation that such a commission might bring about.

Informed consent. The key here is that all those involved in the research (one might again read these as client, designer and community) need to be adequately informed so that they can make an 'informed decision' to take part in the research or not to. Respondents need sufficient information to provide consent. A case, for example, can be made that a respondent might unwittingly provide information that would undermine a company's market edge. In this case the researcher needs to inform the respondent that this might occur and that the researcher has taken certain precautions to exclude at best or limit, at worst, such potential risk. To do otherwise is to court deception. Finally, in this section, it must be noted that respondents should have the 'capacity' to make the decision. Minors, for example, are prohibited by law from providing research information, as are those in mental institutions.

Favourable risk/benefit ratio implies that there is a responsible consideration of the risks involved and the benefits that might accrue, as well as the risks and benefits that have been discovered in assessing the impact. In this domain it is important to note that the client, who does not have the same level of design expertise, needs to be adequately informed of the risk/benefit ratios. The risk/benefit ratio should be contained in the Informed Consent process.

Respect for participants. The notion of respect and the notion of responsibility are intertwined, inevitably.

Given the above the REC will apply its mind using the practical principles to the design research proposal. It must be emphasised that, except in matters of the law, the REC member needs to act responsibly toward the proposed research, engaging with the principles and basing them on the philosophical principles.[9]

Conclusion

The occurrence of Tertiary Education research endeavours in the design disciplines is burgeoning, and the need for guidelines for the ethics part of research needs to be considered. It is a new field and requires much engagement. It is hoped that this article has served as an 'opening gambit' to these deliberations. It has been accepted that the general field of research ethics, particularly at tertiary institutions has already developed extensively, particularly in the natural sciences and medicine. In the fields of the Social Sciences much work has been done. In the domains of the arts and design the engagement with ethics is still in its infancy.

As such, this article acknowledges two matters, in conclusion. Firstly, it acknowledges that there is a fear that the practices and principles that have been accepted in other domains might be 'imposed' on a field such as art and design that has other practices, requirements and demands. This fear is real, in the author's opinion, and therefore the sooner the debate is started and domain specific guidelines generated the better it will be for the domain. There are legal moves afoot that will make ethical clearances mandatory.

Secondly, this article has generated general guidelines developed from the Social Sciences and the concept of Human Rights. Nevertheless, the application of these to art and design is speculative in nature in the article. This speculation is acknowledged, but that is the nature of a prolegomenon – it is simply meant to be 'coherently provocative.' One trusts that others will take up the debate as well.

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[9] In research that needs to engage with children, the medical field and aspects of natural science type research, there are guidelines that are also used. In the Social Sciences the Human Sciences Research Council's Code of Research Conduct is used where appropriate.

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Short Biography

Allan Munro is a Research Professor in the Faculty of the Arts, Tshwane University of Technology. He has a PhD in theatre from the Ohio State University. He has published papers across the Arts spectrum and delivered papers at conferences both nationally and internationally. He has supervised Masters and Doctoral candidates in such fields as Music, Graphic Design, Photography, Fashion, Film and Theatre. His current interests are in Practice-Led research and their methods in the arts. He has lectured on Research Methods in the Arts at a number of universities, and is completing a book on this, and on creative writing for theatre. He has written a number of plays that have been produced both nationally and internationally. He serves on his University's Central Ethics Committee.

AUTOETHNOGRAPHY AS A RESEARCH METHOD IN DESIGN RESEARCH AT UNIVERSITIES

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Abstract

It is generally accepted that the process of design is "messy," in that the final design "emerges" from an engagement of the designer with a plethora of sources, stimuli, interactions, commission demands, client needs (and wants) and other practices that engage with the problem at hand. By contrast, most definitions of research and research report writing emphasise the notion of a "systematic investigation" leading to a solution of the problem. Furthermore, most research requires the demonstration of so-called "new knowledge." Thus a research report has to (a) demonstrate evidence of some form of systematic thinking, has to (b) present the findings of that systematic thinking, and has to (c) argue the case from this for "new knowledge."

This article argues that the method of autoethnography provides a system that is an effective research strategy for fulfilling these obligations, as it provides a strategy for evidence gathering and evidence interpretation that is embedded in the temporality of emergence as a critical design process. The paper will argue firstly that the "auto" – that is to say the "I" of the designer, with his or her subjectivity and experience -- locates the designer centrally in the creative project. Secondly, the "ethno" (culture) locates the design in the culture of design practice. In this sense the interrogation of and the use of design practice are used as part of the critical reflective moment, in the process of triangulating raw data for interpretation purposes. Finally, the "graphy" (that is to say, writing, used in this sense as both the visual language of designing and written language of reporting) suggests systems of capturing and documenting raw data as it comes to the fore in a temporal manner to provide evidence for the emerging new knowledge.

On the one hand such new knowledge is inevitably embedded in the design itself (it is "written into" the design), but on the other hand the new knowledge is also embedded in the practice of reflection/reflexion. Arguably the autoethnographic method fosters this reflective/reflexive practice, and, tentatively, might bridge the possible gap between the "designer's handbook" and the demands of research output and new knowledge.

Key Words: *autoethnography, culture, creativity, innovation, research, design research.*

Introduction

This article concerns itself with developing a particular type of system that will assist in the capturing of new knowledge during specific types of design-based research processes undertaken at South African tertiary institutions. Such research might culminate in a degree or in an article, but the deciding factor is that it needs to engage with the demands of research outputs, processes and procedures.

There are as many definitions of research as there are books on research. However all have similar characteristics, in that they suggest that research is (1) a systematic pursuit of new knowledge about the world and its operations, that (2) in the process new insights and new procedures are possibly developed, and that (3) set practices, theories and views are either used to substantiate such newness or are in themselves challenged. All research results therefore have to be supported by the collation and interpretation of evidence. All definitions also agree that the new knowledge needs to be placed in a public arena in some form – usually a written form.

It is generally accepted that any research follows two separate yet interlinked trajectories. On the one hand there is the trajectory of the actual doing of the research – the data collection, the engagement with raw data, the development of the potential new knowledge and the like. This trajectory is a process-driven one and is therefore time and place dependent, it is emergent, and it negotiates

exigencies as they arise. The second trajectory is a rhetorical one and is to be found in the 'document' that might be called the 'research report.' In essence the research report is a product that captures the findings of the research and argues and persuades for the relevance and acceptability of such findings. Generally the research report is developed after the completion of the research process and is dependent upon the processes for the organisation of the emergent findings into a coherent and persuasive whole. Such a 'post-organisation' relies upon the accepted rhetorical strategies of a research report. In terms of design research, therefore, the actual making of the design would follow the trajectory of 'doing research,' whereas the final product would follow the rhetorical needs of the research report.

At many universities, both in South Africa and abroad, there has been much debate about the nature of the 'research report' in the creative tertiary institution departments. (See, for example, the articles in Barrett & Bolt, 2009; Macleod & Holridge, 2006; Gray & Malins, 2004, for the range of the debate). Positions in the debate have ranged from the one side of the argument that claims that the design itself – the final set of blueprints, for example -- is in an of itself a type of 'research report,' in that it could not have come into existence without the coherent, critical, conceptual and creative processes that are required to develop such a design blueprint. This is the argument that adheres to the notion that the creative output *is* the equivalent of research output and therefore should be assessed and recognised as such – the design *product* is the culmination of the research *process*. On the other side of the argument the 'traditional' position is held, namely that a research report emanating from a tertiary institution should be presented in written form – the design process and the design product should be captured in a 'written' research report as this adheres to the demands of the academia. 'Hovering' in between these two positions are the development and recognition of so-called Practice-Led research (PLR) or Practice-Based Research (PBR) models. In this approach the argument is made that new knowledge is generated *because* the design process has been undertaken. In other words, any new knowledge, new insights and new applications have come about because the design process has been documented in some way and such knowledge, insights and applications have become apparent through an analysis of the specific *process* of design for a specific project. Put another way, the design product is one thing, but the epistemological gain (new knowledge) is another. The argument contained in this article speaks predominantly to this last case and poses the question: how can the actual creative design process for a particular project be captured so that such epistemological gain can be discovered? I argue that the methodological processes of autoethnography can assist in this endeavour, because this methodology assists in capturing the creative and innovative processes as they occur in and through the designer.

A provisional definition of autoethnography draws on the 'auto" (or self), the 'ethno' (or culture) and 'graphy' (the processes of 'writing' – for this article such 'writing' might include any process that commits idea to form). The article will argue that the creative process of design is embedded in the culture of self (the idiosyncratic artist/designer), the culture of design practice and the culture of evaluation or assessment (the culture of gatekeeping). Autoethnography therefore could become a methodology for capturing and analysing new knowledge as it emerges from the interplay between these three 'cultures' in the practice of design.

Creativity and innovation

Before turning to autoethnography in theory and practice it is necessary to set in place a clearer understanding of the notion of creativity and innovation, as this will provide a structured approach to engaging with the method. Hallam and Ingold (2007: 1-8pp) suggest that conceptually (and in application) there is a difference between creativity and innovation. Innovation has generally been regarded as the assessment of how a developed *product* might change or enhance an environment. Thus one talks of 'innovative products.' Creativity on the other hand might be defined as the *process* undertaken that might arrive at the innovative product. This separation between creativity and innovation is useful as it parallels the notion of 'doing' research and research report (the product of the research process) in many ways. Thus, much as doing the research and writing the research report is interlinked, so creativity and innovation are too.

Sawyer (2006, see specifically the chapter on sociology, 117-136) in his interrogation of such interlinking posits a useful understanding of the creative process and, more particularly, how decisions are made during the creative process. Sawyer posits in his chapter on the sociology of creativity that there are three dynamics at play in the act of creativity that influence the decision-making processes in

the development of the innovative product. These three are (1) the influences and input of the individual (or the *idiosyncratic*), (2) the domain (or *medium or discipline* and all that this entails) and (3) the field (or the *gate-keeping mechanisms*). Sociology informs one that a person is the product of the interface between the individual, on the one side, and the environment, time and culture into which he or she is born, on the other. Furthermore, the individual is a product of his or her own unique attributes, preferences, abilities and proclivities, and contributes in his or her own way to the development of the environment and culture. Thus the individual shapes and is shaped by the environment.

Given this one can argue, in the first instance, that in the design process the designer draws on his or her own experiences, insights, training and idiosyncratic views on the matter at hand to attempt to solve the problem that has been set. One can call this decision-making profile the individual's unique *cultural idiosyncrasy*. In this sense the 'cultural idiosyncrasy' refers to a specific designer's profile, which might differ from another. 'Culture,' in this sense, refers to all the factors that have shaped that specific designer up to the point of engaging with the specific design project. However, the project/problem is located and needs to be addressed within the design environment, which is the domain of design practice (in this case).

Sawyer's second aspect of the innovation process notes that decisions around what to include in the product (or how to address the problem that will lead to the product) also draws on the demands of the *domain*. In this he refers to the mechanisms, methods, practices and approaches that are generally accepted within the specific design (in this case) modes of doing things. Also included in the domain are those artefacts and designs that have entered the domain as models and that can be used as exemplars -- this refers both to processes, and to extant design products that might be used as examples of 'excellence.' To a large extent the individual designer learns about the exemplars and learns the practices and approaches through formal educational structures that have developed such practices and approaches through time and experience – structures such as subjects like 'History of Design' or 'Theories of Design.' To a large extent one could define the domain as the *culture of practice*. Nevertheless, what has entered the domain (either as practice or as exemplar) has done so through the 'blessing' of the experts, Sawyer argues.

There exists a cluster of people who are considered the leaders in the field either in terms of design expertise, or design critique (or both). These are to a large extent the 'gate-keepers' of the domain -- the innovators, educators and experts of design practice and exemplar excellence. Within the design discipline one might add the commissioners of particular projects, who have to accept the final product or design. Sawyer calls this coterie of expertise the *field.* A designer, therefore, needs to (or perhaps inevitably does) engage with what is, or might be, considered 'acceptable, fresh, insightful, ground-breaking' (or whatever 'term of novelty' that might be used) in the eyes of the experts or the field, and to adapt his or her design to that end. One might call the field the *culture of gate-keeping.* The gate-keepers have theoretical, philosophical, technical and aesthetic paradigms that they bring to bear in the adjudication and assessment of new products. These paradigms are embedded in the domain as well but have been placed there by the field. (It can also be argued that part of the field's mandate is to draw on its own idiosyncrasies, which may be called 'inspired insight'). The aspirant designer 'learns' about these theories and other aesthetic paradigms during his or her training, one would argue.

In essence, in any act of creativity that leads to an innovative design product decisions are made by the designer according to the tensions amongst these three. In other words, the decisions around inclusion or exclusion of certain aspects of the design are made as the designer wrestles with the demands of idiosyncrasy, domain and field. Put another way, the designer engages with the tensions between his or her own idiosyncratic culture, culture of practice of the medium, and the culture of gate-keeping (or pursuit of affirmation by the experts) in attempting to solve the problem and produce the product.

Cultural practice working premises

Critical for the argument made in this article is the idea that 'culture' as shall be used is about the generic dynamics that abound in the making of culture, not in a particular culture. In other words, 'culture' as used here is not necessarily anthropological in nature, but attempts to 'parallel' the dynamics of 'anthropological cultural practice.' Chang (2008: 21-23) posits seven working premises to

attempt to explain the dynamics of cultural practice. As one works through these premises one is mindful of the threefold creativity cultures at play – idiosyncrasy, practice of discipline and gate-keeping. The seven premises are the following:

Individuals are cultural agents, but culture is not at all about individuality. This suggests that in as much as the individual shapes the cultural practice, so the cultural practice shapes the individual. For the threefold 'cultural' dynamics at play in creativity this would imply that as the individual brings the creativity for a particular design project to bear, the designer and the design are not unique but are a product of in the interwoven practice of self, practice and control. Furthermore, in the process of the particular project design, the 'three cultures' are also in the process of redefining the designer's 'self, practice and control.' Put another way, the designer makes the design, but the design 'makes' the designer. Provisionally, autoethnography as a method might assist in documenting this dual process and the discoveries made through it.

Individuals are not prisoners of culture. If design were a replication of culture only then it would not be creative. Furthermore, design practice is not a prison that binds all design to replication. Nor are parameters of control (gate-keeping) overbearing but are porous upon persuasion, insight and the accumulation of new developments. (It might be added that such porosity is also dependent on shifting power positions and changing paradigms). Thus one can argue that a 'gap' arises between replication and innovation. The research question therefore might be: how does one capture the workings of the designer in that 'gap?'

Despite inner-group diversity a certain level of sharedness, common understanding, and/or repeated interactions is needed to bind people together as a group. (This principle also addresses another Chang premise, namely: *each membership contributes to the cultural makeup of individuals with varying degrees of influence)*. One of the central tenets of design (and creativity) is the push and pull of idiosyncrasy. However, the idiosyncratic is bound (or 'framed') by like-mindedness of designers and their practice. Designers share practice, share an understanding (or at least an acceptance) of the necessity of validation and to certain extent share the criteria for such validation. Ironically, perhaps, it is the 'sharing of the necessity for uniqueness' that binds designers and the discipline together. It is in the shared *interaction* that the discipline or cultural practice of design is developed. Furthermore, it is the shared *discourses* of practice, critique and process that bind designers. One of the purposes of this paper is to posit the potential for a shared discourse of *research* practice for designers through the use of autoethnography.

Individuals can discard a membership of a cultural group with or without "shedding" their cultural traits. (This premise must be read with the last of the Chang premises: *Individuals can become members of multiple social organisations concurrently*). Central to this premise is the fact that the design researcher often has to do exactly this – it is fully expected of a designer to 'put on' the mantle of the idiosyncratic to generate potential *new* ideas, but then to take up the mantle of practice *to make the design 'work.'* This potentially implies eschewing, engaging with or contradicting the mantel of the idiosyncratic concept. 'Making the design work' implies shedding the idiosyncratic and the practice mantle and taking up the mantle of gate-keeper or critic to test the efficacy of the design. Most designers slip easily amongst these three mantles. However, as I shall argue, *it is for the documenting of the movement from mantle to mantle that a research method is required. This is because it is in the reflexion of the movement that new knowledge (about the self, the practice and/or the controlling mechanisms) may come to the fore*. Autoethnography may provide such a method.

Without securing official memberships in certain cultural groups, obvious traits of membership, or member approvals, outsiders can acquire cultural traits and claim cultural affiliations with other cultural groups. It is, of course, the purpose of education to make outsiders who demonstrate the interest or potential to become 'official members of certain cultural group,' official members of that group! In this sense education provides a gateway to acquiring design practice and the tools of design gate-keeping. Diplomas and degrees appear be documents that officially grant the holders membership of the culture of design, acknowledging and rewarding their idiosyncratic worth, their mastery over the culture of practice, and their critical 'gate-keeping' insight. However, there is a second implication to this premise, and that is that members of other disciplines (sociology, psychology, cultural studies, engineering and history, for example) can slot into certain parts of the threefold cultural groups that this article is suggesting, to greater or lesser extent and worth. By the same token, designers should be able (or allowed, following the premise) to access the practices of those other disciplines. This

point is made here because it will become evident that in the justification both of the design as part of the research, and as part of the new knowledge that is generated through design practice, those disciplines might have to be accessed. The psychology of the design process might be deemed an example. A second example illustrates how the movement patterns of a community might influence the design of the interior of a particular space. The movement in the 'gap' between a design approach to a problem and a psychological approach to the same problem (as that gap is 'discovered' in the process of designing for a project) needs to be documented, because this is where another type of 'new knowledge' may be found. The processes of autoethnography might offer such a method of documentation.

The interrelationship between research and design

There is a remarkable parallel here between the problems of design and the problems of research. Fundamentally a researcher encounters a problem that needs to be solved. The first approach is perhaps an intuitive one, based on an idiosyncratic approach. This is then assisted, shaped, tempered and formed by extant methods and approaches that are located in the culture of research practice (or the research domain), and the product is presented in the persuasive way that the culture of gate-keeping (or the field) requires – the assessment or peer-review mechanism demands.

As argued in the introduction, there are three extant concerns in the research methods that this article pursues, and they are that (1) any research has to produce 'evidence' to support the conclusions it reaches (and that this evidence has to be gathered and collated in a form that is acceptable to the 'field'), (2) that research needs to generate 'new knowledge' (or 'epistemological gain') and (3) that design processes are in and of themselves 'messy' ones that at times defy the 'strategic and systematic' approaches to doing research that research seems to require.

Gedenryd (1998 -- much of what follows in this section on the 'messiness' of design practice is taken from this work) has argued that the approach to designing is 'messy,' in that, whereas in traditional research there appears to be a systematic and linear trajectory, in design the approach taken by most designers is haphazard and non-linear. According to Gedenryd, in traditional research a problem is identified, a strategy to solve the problem is developed using extant methods and methodologies, and, systematically and under stringent control mechanisms, the strategy is implemented, the data gathered, collated and interpreted, and the findings made. However, in the design environment matters play out differently. Gedenryd, drawing on extensive surveys of the design practices of designers, notes that once a problem is identified and described, most designers first develop a large number of potential answers to the problem (generally called 'thumbnails') in a very quick fashion. One might call this the idiosyncratic culture at work. Once these are completed, the designer then interrogates each one and selects four or five that seem to the designer to hold the most benefit or promise. Here one can see the possibilities that all three cultural groupings are at work, in the reflexive, decision-making process. Once this is done, the designer then does 'mock-ups' of these to further interrogate their potential. One could argue that in this phase the idiosyncratic comes to the fore once more. Part of that process begins to include further enquiry into the efficacy of the mock-up as a potential final solution to the problem. Thus the culture of practice and the culture of gate-keeping predominates. It is at this stage that further research is done so that the justification for the product can materialise. Put another way, the potential exists that the culture of practice of other disciplines might be harnessed to assist in the justification. Once this stage is completed and final selection is undertaken, the final product is produced. In essence then, Gedenryd argues, the process works backwards and forwards between problem, potential solutions or solution, gathering of information, further experimentation, refinement, adaptation and complexity. In short, seen against the light of traditional research, the process of reaching a conclusion is messy; it calls for a divergent thinking approach to creativity, it is emergent and appears to be very improvisational. If it is so, then it inevitable opens areas of interrogation to see whether these areas offer new knowledge at any stage. Thus a method of capturing the process needs to be developed, and this article argues that such a method might be autoethnography.

However, one could argue that the process is not at as haphazard as is generally believed. If Sawyer's argument holds, then the designer, in the emergent process, is continually making decisions as to what to include (and by extension what to change, or exclude from what is being worked on) even at the thumbnails stage, but definitely during the development of the mock-ups and the final product based on his or her idiosyncrasies, knowledge of the domain and expectations of the field.

Furthermore, such a process plays out in two dynamics namely the *reflective* moment and the *reflexive* moment. The *reflective* moment occurs from moment to moment (sometimes appearing to happen 'unconsciously') as the designer ponders quickly what has just happened and then applies the next moment, which in turn is assessed reflectively, and so the creative process appears to 'flow' or emerge (seemingly reasonably spontaneously). Decisions are made quickly, seemingly intuitively, and then implemented. Decisions are made based on immediate problems that arise. The *reflexive* moment, on the other hand, occurs later in the process and tends to appear to be a much more conscious, deliberate and ponderous process. In the reflexive state the designer seeks to find, refine and define or justify the final decisions made in the product.

Two important concepts materialise here. In the first instance the reflective moment appears to be part of the haphazard, raw data development from which the final product will emerge. In the second instance the reflexive process brings one closer to the traditional view of developing the research report, as findings are developed from the raw data -- trends and tendencies are discovered, coherence is sought (and substantiated) and conclusions reached and justified. There appear to be two parts to the process. The first part concerns the capturing the raw data as it emerges. This is a reflective one caught in the moment of deciding to capture this bit of information and not that one, for example. The second part of the process of coming to conclusions is a reflexive one that happens predominantly in the final stages (or at key moments) in the research. Key to this understanding, therefore, is the concept that reflective practice (the first part) might be seen as a problem solving strategy, whereas reflexive practice (the second part) might be seen as a theory building practice where epistemological gain is discovered or 'new knowledge' is found (and documented).

Where is the new knowledge in the research/design interface?

The question now arises in the design/research interface: is there more to data capturing during the design process than capturing the development of the product? This paper argues that, given the fact that the design product currently in South Africa is not seen as a sufficient basis for the research equivalent and therefore for the acceptance of "new knowledge" or epistemological gain, such an addition or parallel process must be sought. In other words, it is not enough to justify the decisions made in the design from extant theory or practice – research needs to generate something more in terms of new knowledge, new insights, new processes or new criteria. Fundamentally, I argue, research needs to present some form of epistemological gain.

The argument that follows develops two interwoven strands of thinking. The one strand argues that new knowledge can be gained within the three creativity strategies that Sawyer notes – the idiosyncratic culture, the culture of practice and the culture of gate-keeping or the decisions around the pursuit of 'excellence'. The 'gaps' illustrated from the argument this far suggests that the design process provides rich data to develop new knowledge in these dynamics. The second strand argues for a process of recording the data that develops during the design process as part of the methods of design research. These methods might be found in the approach known as autoethnography.

Autoethnography as method

The research method known as 'autoethnography' has developed within the broad frame of the notion of 'Qualitative research methods.' Because it falls within this ambit, it draws on the ontological position that the world is experienced and therefore can only be tangentially described and predicted. The epistemological strategy that goes with this ontological paradigm is one of interpretation rather than facts and definitive conclusions. Given this, the position of the researcher within his or her own paradigm needs to be embedded in the research process and taken to be part of that research process. This implies that, for research to move beyond the seemingly idiosyncratic nature of interpretation (or that all interpretation is only idiosyncratic), a method needs to be developed that can lead to the acceptance of some form of epistemological gain. Fundamentally qualitative research methods employ the process of 'triangulation' to deal with the potential fallibility and idiosyncrasy of the research in the generation of new knowledge. Triangulation implies the interrogation of data gathered from a number of sources that are reacting to a particular given circumstance, situation, or, in the case of this paper, the design process. Triangulation calls for the search through the haphazard, emergent and disparate data available from diverse sources, in a process of seeking trends and tendencies, so that these overarching trends and tendencies can be interpreted in the

pursuit of new knowledge. In essence, these trends and tendencies, interpreted against extant literature, can produce epistemological gain in the area under investigation.

It is accepted that such new knowledge hovers between the idiosyncratic on the one hand, and stable and generalisable new knowledge on the other. However, whereas quantitative research methods generate new knowledge that might be seen as generalisable (that is to say, applicable in all places but at that point in time), qualitative research methods engage with the specificity of time and place. Thus, the description of the emergent new knowledge is taken to be valid by a reader of the research report because the reader recognises similarities between the situation, context, place and dynamics described in the research report and the reader's own (for example). Therefore the validity of the new knowledge is embedded in the interpretive strategies of the reader of the new knowledge. This has brought about the strategy of 'thick description' as developed by the ethnographer Clifford Geertz. Arguably the end product that is a design might be considered a 'thick description' *par excellence* in that it demonstrates and presents all aspects of the project. However, it may not, in the first case, justify the decisions made in the design, nor, in the second case, and in line with the demands of research, present epistemological gain.

Returning, therefore, to design and research this article has argued so far that the design process is emergent and therefore the very act of emergence becomes important. The conceptualisation of a method to accommodate this might lie in the methods of autoethnography. (It needs to be noted that I draw predominantly on the work of Heewon Chang [2008] for what follows). The term itself contains the threefold dynamics at play: 'auto' refers to the 'self' (the designer, in this instance), 'ethno' refers to culture (and from the argument I have been making, such a concept of culture is indeed threefold – idiosyncratic culture, culture of practice and culture of gate-keeping), and 'graphy,' which speaks to the act of writing (or, speculatively, any act that commits form to idea). For autoethnography the key data gathering and analytical process is captured in the practice of narrative. Because design is emergent, that is to say the product emerges from the process of designing, and because such emergence occurs over time, in essence what comes about is a *narrative of design*.

The tool to capture such a narrative is the diary or journal. Such a diary or journal should capture the events that occur during the development of the design, as these events unfold. These events can be visual, inspirational, theoretical, cognitive, comparative, theoretical or simply anecdotal. Inevitably the visual diary (perhaps also known as a 'designer's handbook') forms part of the thumbnail to mock-up to design trajectory, but it is the written diary approach that is also important as this provides two research moments. In the first place, the *reflective* strategy is at play – the designer, operating in specific time and event moments, captures the decision-making thoughts as they unfold in the time that they unfold. Critical to the approach is that this must not be done retrospectively as this might induce editing, censoring or establishing of trajectories of thought too early in the process. Furthermore, that which is captured in the journal might engage with any or all three of the 'cultures' as outlined about, namely idiosyncratic culture, culture of practice, and culture of gate-keeping. These three strands of information or raw data will form the pool from which the new knowledge will emerge. (Speculatively it can be posited that the designer, following a standard qualitative method, 'conducts' a series of interviews with himself or herself to capture the lived experiences of doing the design.)

In the second instance, the journals provide the grounds for the reflexive process where the researcher (from the vantage point of having completed the design) can analyse the raw data to search for trends and tendencies amongst the masses of information (written and visual) captured during the process. It is in these times that the new knowledge or epistemological gain percolates to the surface as a result of this reflexive analysis *post* design.

It is important to note that such new knowledge might fall into any one (or more) of the three cultures enumerated. It might be, for example, that the designer discovers something about himself or herself (a style flaw or strength, a clinging to a dominant approach and so on, for example); it may be that the new knowledge delivers new insights into design strategies, methods, processes or technologies, or it might be that the new knowledge engages critically with the established parameters of critique, questioning validity or certainties, for example. The autoethnographic approach, if it is adhered to, provides evidence of such shifts.

It can be argued that the strengths of this method lie in three areas. Firstly the centrality of the designer with his or her proclivities, experience and 'talent' is proclaimed and validated. However (and

secondly), in contrast, this centrality is tempered by the inevitability of engaging (in triangulation mode) with the culture of practice and the culture of gate-keeping. Finally, the method insists on a large range of rich data that is to be captured and to be analysed in pursuit of the gathering of evidence for new knowledge. It is often in this rich data that the veins of new knowledge are to be found.

Conclusion

This article has argued that there are strong parallels between the research process and the design process. It has, however, argued that the design process is potentially 'messy' and therefore a method needs to be sought to capture evidence from the process as the design process emerges and unfolds. Such a method is autoethnography. The article posits that new knowledge or epistemological might be found in many areas, but the article has focused on the three areas encapsulated by the notions of the culture of idiosyncrasy (the individuality of the designer), the culture of practice (the demands and context of the medium) and the culture of gate-keeping. In this last cluster the commission of the design might be included. Fundamentally the article has argued that it is the design process itself that generates the new knowledge, and not the design product and its embedding in society. If this is so, then autoethnography provides an excellent research method to capture that new knowledge.

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Short Biography

Allan Munro is a Research Professor in the Faculty of the Arts, Tshwane University of Technology. He has a PhD in theatre from the Ohio State University. He has published papers across the Arts spectrum and delivered papers at conferences both nationally and internationally. He has supervised Masters and Doctoral candidates in such fields as Music, Graphic Design, Photography, Fashion, Film and Theatre. His current interests are in Practice-Led research and their methods in the arts. He has lectured on Research Methods in the Arts at a number of universities, and is completing a book on this, and on creative writing for theatre. He has written a number of plays that have been produced both nationally and internationally. He serves on his University's Central Ethics Committee.

INTERIOR DESIGNERS: UNACKNOWLEDGED ROLE PLAYERS IN SOUTH AFRICAN RETAIL DESIGN

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Abstract

This paper reflects on research conducted on the role of interior designers in retail design within the South African retail sector. Based on three leading corporate retailers, the paper explores the contribution of interior designers to retail design in the South African clothing and footwear retail context. In 2008 these retail companies collectively held more than 50 per cent of a R96.2 billion retail market share. Their primary turnover is generated through consumer purchases concluded in retail stores. The design of retail stores have become a means of marketing communication and are commonly used as a differentiation strategy by retailers. It is here that interior designers can make a considerable contribution to retailers. This qualitative research study reflects on information obtained through open-ended interviews with the managers and senior managers involved in the design and implementation of retail stores for these leading clothing and footwear retailers. A qualitative content analysis method was employed to identify overlapping themes and categories to compare the role of interior designers in these three corporate retailers. The research reveals that interior designers are currently under utilised due to a poor understanding of the role that interior designers can perform in retail design. Although the paper provides information on the approach and operation of retail design in the clothing and footwear sphere of retailing, wider application can be drawn to the role of interior designers in retail design in South Africa. The paper proposes that stakeholders such as education could make a valuable contribution in promoting interior design in all sectors within the South African economy.

Key Words: *interior design, retail design, interior design education*

Introduction

Retail design is a complex, multi-dimensional activity that involves various role players who contribute to the successful development and implementation of a retailer's identity (Mazarella 2010:[sp]). This paper acknowledges the interior designer as one of these role players that contribute to retailer identity through the application of creative and technical solutions when designing and implementing a retail store. The paper will show how corporate clothing and footwear retailers in South Africa utilise interior designers in retail design.

Retail differentiation and consumer experience

In the current global market, retailing has become a very competitive and dynamic market given that merchandise and associated services are effortlessly imitated and repackaged (Janse van Noordwyk 2008:313; North, De Vos & Kotze 2003:41). In an effort to survive, retailers employ differentiation as a strategic marketing activity to distinguish their products and services from that of their competitors. In doing so, they become more appealing to a particular consumer market (Baker, Grewal & Levy 1992:445; Janse van Noordwyk 2008:27; North *et al* 2003:41; Van der Vyver 2008:4). When consumers are placed among multiple product options, their preferences will always be based on the inherent differences of the products, whether implicit or explicit. These differences will ultimately motivate the consumer to select a specific product or service (Collins-Dodd & Lindley 2003:345). It is common practice for retailers to differentiate themselves by representing their distinctive identity through the design of their retail stores (Baker *et al* 1992:329).

The growing economic significance of experience-based consumption and the use of consumer experience as a differentiation strategy has become a dominant subject in literature in recent years

(Ballantine, Jack & Parsons 2010; Grewal, Levy & Kumar 2009; Puccinelli, Goodstein, Grewal, Price, Raghubir & Stewart 2009; Verhoef, Lemon, Parasuraman, Roggeveen, Tsiros & Schlesinger 2009). Retailers make use of retail design to distinguish, enhance and promote a positive shopping experience. They do this by creating cues to attract the consumer into a retail store that will engage them in a gratifying shopping experience (Baker, Parasuraman, Grewal & Vos 2002:122; Hu & Jasper 2006:25; Verhoef *et al* 2009:31; Grewal *et al* 2009:1). Where retail stores in the past would design the retail store to accommodate the product, the current trend is to lay emphasis on the experience, perceptions and emotions of the consumer (Murialdo 2008:7). Consumers anticipate a total shopping experience that includes both utilitarian and hedonic benefits (Kim, Sullivan & Forney 2007:16). As a result the relationship between retail design and retail management is an essential part of creating this total consumer experience through proper strategic, marketing and operational planning (Davies & Ward 2002:174).

Interior Design and retail design

Retail design is a speciality that is well-established in the interior design discipline (Murialdo 2008:2; Petermans & Van Cleempoel 2010:22). In this multifaceted profession, creative and technical solutions are applied within building shells that are aesthetically pleasing and functional (Mazarella 2010:[sp]). Professional interior designers assist clients by relating interior space to business strategies and objectives (Mazarella 2010[sp]; Moore & Lochhead 1998:121). They furthermore support companies by increasing the benefits of retail design in the course of retail differentiation and strategic leadership (Mazarella 2010:[sp]).

The International Federation of Interior Designers/Architects (IFI) defines an interior designer as a person who is "qualified by education, experience and recognised skills, who identifies, researches and creatively solves problems pertaining to the function and quality of the interior environment; and services relative to interior spaces" (IFI [sa]). They continue to explain that these skills include "programming, design analysis, space planning, aesthetics and inspection of work on site, using specialised knowledge of interior construction, building systems and components, building regulations, equipment, materials and furnishings and prepares drawings and documentation relative to the design of interior space, in order to enhance the quality of life and protect the health, safety and welfare of the public" (IFI [sa]). The knowledge and wide range of skills that interior designers hold, enable them to resolve matters innovatively and resourcefully where it concerns the appearance, function and quality of any interior environment (Mazarella 2010:[sp]). This includes retail store environments.

Due to the limited amount of literature about retail design in interior design, the researcher conducted a short survey to establish the significance and application of retail design in interior design education in South Africa. The survey was directed at nine educational institutions registered with the South African Institute of Interior Design Professions (IID) that offer full time courses in interior design and interior architecture. The results of the survey indicated that all these institutions include retail design in their third year curricula and that some institutions include retail design at even earlier stages in their programmes. Accordingly, it can be construed that retail design is significant to the interior design industry in South Africa.

In addition, it is evident that competitions such as the PG Bison 1.618 student awards recognise the importance of retail design. This international competition that runs annually places a renewed spotlight on retail design for both the industry and education. The competition gives interior design students the opportunity to focus on the requirements of an identified client. In 2010 the competition involved The Foschini Group retail chain @home and in 2011 the competition brief engaged Stoned Cherrie's Love Movement.

Retail in South Africa

Retailing in South Africa is dominated by several large holding companies that constitute the greater part of the leading retail brands in the country (Euromonitor 2009:[sp]). These holding companies do not only operate in a variety of merchandise categories, but also target the lower-, middle- and upper income consumer markets in South Africa (Datamonitor 2009:[sp]). These companies could face fierce competition as leading international retailers take up new opportunities in this already competitive industry in South Africa (Euromonitor 2009:[sp]).

Store-based retailing dominates the South African retail environment (Euromonitor 2009:[sp]). While internet shopping is on the rise, personal computers are still a luxury that is owned by the middle and upper income consumer markets (Cobweb information 2010:[sp]). Furthermore, distrust in the postal system results in the majority of South Africans still preferring to do transactions at retail stores (Euromonitor 2009:[sp]).

The South African apparel industry

In 2008, the total South African retail trade sales for textiles, clothing, footwear and leather goods were R96.2 billion (Statssa 2009:[sp]). Data from Statistics South Africa (2009:[sp]) indicate clothing and footwear retailers contributed a total of 19,2 percent of the total retail trade sales during 2009, second only to the general dealer retail sector. The clothing and footwear retail market grew at a compounded annual growth rate (CAGR) of 10 percent from fiscal 2005 to fiscal 2010, despite the economic downturn. This growth is mainly due to the expansion of the black South African middle class that have "more than doubled in size since 2000" (Cobweb information 2010:[sp]). This rapidly emerging middle class historically spends a higher percentage of its disposable income on clothing and footwear products (Edcon Holdings 2010:15).

Three of the foremost South African clothing and footwear retail companies are Edgars Consolidated Stores, Foschini and Woolworths Holdings (Euromonitor 2009:[sp]). Together these companies make up more than 50 percent of the clothing and footwear retail sales in South Africa (Cobweb information 2010:[sp]). These companies generate their primary turnover through consumer purchases that are concluded in retail stores (Cobweb information 2010:[sp]; Venkat [sa]).

Three leading clothing and footwear retailers

Edgars Consolidated Stores (Edcon), The Foschini Group and Woolworths Holdings jointly hold approximately 50 percent retail market share and is regarded as leading clothing and footwear retailers in South Africa. These corporate retailers trade in over 3114 corporate and 160 franchise stores. These retail stores are located in shopping malls, city centres and high streets of all major locations in Southern Africa. The retail sales and profitability of these corporate retailers depend primarily on retail sales generated from their retail stores (Edcon Holdings 2010:18).

Jointly these clothing and footwear retail companies spent R866 million on retail store developments during the fiscal year 2010 (Edcon Holdings 2010:18; The Foschini Group 2010:35; Woolworths Holdings 2010:30). Each retail company undertakes to grow their retail space even in these difficult economic times. Edcon acknowledges that "one of our key business strategies is to expand our base of retail stores" (Edcon Holdings, 2010:34). Each and every store, whether new or refurbished, needs to be conceptualised, designed, planned and built on site before the retail sales can be generated. This paper will investigate the role of interior designers in the design and implementation of retail stores for these South African clothing and footwear retailers.

Research

This qualitative investigation reflects on data obtained about three corporate retailers through interviews with six senior managers who are involved in the design and implementation of retail stores for Edcon, Foschini and Woolworths. These respondents manage interior designers that design and implement retail stores for these retailers. All respondents have extensive retail backgrounds and at least five years' experience in retail. Their qualifications include marketing, retail management, property management and law. None of the respondents have an interior design or design related qualification.

The selection of these retailers was based on the financial contribution that these retailers make to the clothing and footwear retail market. Clothing and footwear is a dynamic market since "consumer needs are changing at a more frequent pace, creating a higher demand for newness" (Janse van Noordwyk 2009:19). This constant expectation for change results in the frequent modification their retail stores. Because of confidentiality agreements, the names of the companies can not be associated with specific structures within each company. Therefore these companies will be referred to as company A, B and C from this point on.

The interviews were conducted over a period of two months and took place at each respondent's place of work. The interviews focused on the role of interior designers in the design and implementation of the company's retail strategy through retail design. The interviews were semi-structured and the researcher made use of open-ended questions to gather the information. These interviews were recorded using a digital voice recorder. The audio files were analysed using a qualitative content analysis method to identify overlapping themes and make comparisons between the three corporate retailers.

However great the benefits of the study, it must be understood that the purpose of this research is not to present a generalised theory, but to explore the role of interior designers in retail design in South Africa. This results in a corresponding limitation to this research.

Delimitations of the study

The paper recognises that retail design exist in many retail sectors where transactions are concluded in retail stores. This includes banking, entertainment and other sectors. This particular investigation is limited in that it only investigates the role of interior designers employed by corporate clothing and footwear retailers in South Africa to design and implement retail stores. It is therefore important to understand that the results of the study cannot be generalised or applied to all South African retail sectors, nor can it apply to all interior designers who specialise in retail design. In order to determine if the results of this investigation will be applicable to interior designers in other retail sectors, further research is needed.

Findings

The investigation reveals that clothing and footwear retailers differ greatly in the manner in which the manage retail design as a function in their companies. The companies manage retail design under different components of the business structure. One company incorporates store design department into marketing while another places it in the operation management portfolio. One respondent replied "since Operations have to pay for the store, they should be in charge of it". The other remaining company has their retail design function positioned in the Property Development Department. This department is managed independently from any retail chain and operates as a service provider to the different retail chains for the holding company.

The retail strategy

All respondents declare that their executive management drives the retail design strategy. This strategy describes the essence of the retail brand that represents what the retailer stands for and how they want to be regarded by consumers. The respondents also indicated that their retail brand personality is articulated through among other things, the design of their retail stores. Although the retail design strategy is permanent, the manifestation of the retail brand personality will change to align with the latest trends.

The articulation of the retail design strategy is implemented by different people in these companies. Two companies declare that they use subcontract companies, usually from abroad, to develop new store design concepts. Nevertheless, two respondents stated that they believe that these subcontract companies seldom understand their business well enough to make a valuable contribution to the articulation of the design strategy. For this reason these companies revise the store design concept inside the retail companies.

In addition, two of the retail companies subcontract all or part of the production of technical drawings to subcontract companies in South Africa.

Role of the Interior Designer

The term 'interior designer' was often misinterpreted during the interviews. Only one respondent demonstrated an understanding of the term interior designers and the functions that professional interior designers perform. Apart from this respondent the terms 'designer', 'architect' and 'interior designer' were used interchangeably throughout the interviews.

Five respondents did not associate interior designers with retail design instinctively. In fact, two of the respondents commented that it was “difficult to find individuals that specialise in retail design”. Another respondent remarked that not many people know the science behind retail design and yet another maintained that “not many people understand the business of retail design” and that it is “difficult to find people in retail design”.

Although the three corporate retailers employ interior designers to perform functions in their store design departments, it is not a prerequisite to have an interior design qualification to get employed to design retail stores for these companies. Furthermore, the functions that these interior designers are expected to perform differ greatly from one company to another. Some interior designers only develop concepts for retail stores and display fixtures, while others only produce technical drawings. None of the companies expected any of the interior designers to perform both functions. Two respondents maintained that it was not possible in practice to expect one individual to develop new concepts and produce the technical drawings for the same. They give the reason that these are two very different functions that involve two very different ways of thinking. Nevertheless they all believed that these interior designers, regardless of their job function, should have a good knowledge of construction systems, materials and finishes and municipal regulations.

In analyzing the data from these companies regarding the functions that interior designers perform, it becomes clear that substantial discrepancies exist when comparing these functions to those identified in the IFI definition. Interior designers that are employed by these clothing and footwear retailers do not perform all the functions as defined by the IFI.

IFI definition	**Company A**	**Company B**	**Company C**
Identify problems pertaining to the function and quality of the interior environment			√
Research problems pertaining to the function and quality of the interior environment	√		√
Creatively solve problems pertaining to the function and quality of the interior environment	√		√
Do programming			
Perform design analysis	√		√
Solve space planning		√	
Plan aesthetics	√		√
Inspect work on site		√	√
Have specialised knowledge of interior construction		√	√
Have specialised knowledge of building systems and components		√	√
Have specialised knowledge of building regulations		√	√
Have specialised knowledge of equipment,			√
Have specialised knowledge materials and furnishings	√		√
Prepare drawings		√	
Produce documentation			

Table 1: Comparison of functions performed by Interior Designers

The situation raises two vital issues. Firstly, since retail design is a speciality that is well-established in the interior design discipline, the question must be raised why interior designers are not better represented in these clothing and footwear retail companies. Secondly, given that the clothing and footwear retail market spend multimillions on retail store developments each year, can the interior design profession afford not be associated with this very lucrative and publically visible sector of business?

Conclusion

While this paper focuses on the circumstances of three clothing and footwear retailers in South Africa, valuable conclusions can be drawn from it. By adopting a general perspective, the research reveals that interior designers are currently under utilised due to a poor understanding of the functions that interior designers can perform in the retailing. It is imperative for a young and developing profession,

such as interior design, to advocate the value that the profession brings to businesses, such as clothing and footwear retailers. By employing interior designers, these retailers can increase the benefits of retail design in the course of retail differentiation and as a result, their strategic leadership.

This paper proposes that educators and practitioners hold the key to unlock an understanding about the role that interior designers can perform. As stakeholders in this profession, education can make a valuable contribution in promoting interior design in all business sectors within the South African economy. Educators must instill in students the idea that interior designers do not function in isolation, but that they are connected to a larger whole. Interior designers are one of many role players who contribute to the successful development and implementation of a brand identity of any business.

In addition, educators can assist students to understand the context of the decisions they make. This can be achieved when educators facilitate interdisciplinary talks and lectures. In addition, educators should collaborate with practitioners to write up case studies so that information can be shared at conferences and in doing so; contribute to the theoretical knowledge that is so urgently needed to grow the profession.

Acknowledgements

The author would like to acknowledge and extend her gratitude to Mrs. Amanda Breytenbach for her valuable input in the successful completion of this paper.

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Short Biography

Ilse Prinsloo practiced as an interior designer for 12 years before joining the Department of Interior Design at University of Johannesburg as lecturer in 1999. Her passion is retail design and during her career as interior designer she worked on projects that include exhibition stands, supermarkets, hypermarkets, clothing boutiques and clothing chain stores.

UNDERSTANDING CULTURAL IDENTITY AND VISUAL COMMUNICATION IN THE APPROPRIATION OF ICONIC PHOTOJOURNALISM

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Abstract

Modern society experiences the world predominantly through their eyes and the recognition of vision's unique power has led to the development of many new forms of visual communication. Photojournalism is a relatively 'young' form of visual communication; however, photojournalists appreciate that a single iconic image may convey a common understanding of an entire event. It is the aim of the paper to review how the appropriation of an iconic image may suggest original associations, particularly within a South African context.

In their book No Caption Needed: Iconic Photographs, Public Culture, and Liberal Democracy, Hariman and Lucaites (2007) synthesize ideas from visual studies, communication studies, the study of political rhetoric and public culture as well as previous analyses of iconic photojournalism. They use this foundation as a point of departure to build a comprehensive theoretical/interpretive framework for explaining the role of iconic images in American social consciousness, civic identity, and political affiliation. In order to contextualise the reading of the appropriated image this paper reflects on how these authors have reviewed appropriated versions of the iconic photograph Flag Raisings at Iwo Jima. Appropriated versions of Sam Nzima's iconic photograph of Hector Pieterson are then reviewed to determine how appropriation of the image reflects on particularly South African society.

Robert Hariman and John Lucaites (2007:180) state that "the iconic photograph is not concerned with informing the public, but rather that it offers a performance of social relationships that provides a basis for moral comprehension of and response to what is already known". In its appropriated form the iconic image has the ability to transcend the boundaries of the photographic form to be presented for example in advertising, cartooning, as a statue, replayed in film and artistically represented. It therefore becomes a malleable visual communication source. The significance of this paper lies therein that the findings reveal a deeper understanding of the role of the image as a frozen moment with the ability to become a crucial resource for reflecting on society at a particular point in time as well as to link to a common source of identity within the South African perspective.

Key Words: *iconic photojournalism, Hector Pieterson, image appropriation, visual communication*

Introduction

Modern society experiences the world predominantly through their eyes and the recognition of vision's unique power has led to the development of many new forms of visual communication. Photojournalism is a relatively 'young' form of visual communication, the term originally referred to the photographic work undertaken for picture magazines and newspapers during the early nineteen twenties. According to Rick Williams and Julianne Newton (2007:xv), when referring to contemporary photojournalism, "no form of visual communication has a more profound effect on the private minds of individuals or the development of the public mind and culture than the visual imagery of today's media".

Iconic images produced in the tradition of photojournalism demand immediate attention, are culturally significant and represent a common form of identity within a society. A single iconic image has the capacity to convey a common understanding of an entire event. Donald Pease (2007:x) postulates that:

> Iconic photographs possess what might be called the power of epic concentration, condensing the tragedy of history into a single arresting image. When iconic photographs freeze history into memory, they make us feel as if they have done the work of memory for us. They come to us like documents from the other side, last wills and testaments that are drawn up in the service of personal and collective memory.

It is the aim of the paper to review how the appropriation of an iconic image, produced within the tradition of photojournalism, brings original associations to a new context particularly within a South African perspective. In their book titled *No Caption Needed: Iconic Photographs, Public Culture, and Liberal Democracy,* Robert Hariman and John Lucaites (2007) synthesize ideas from visual studies, communication studies, the study of political rhetoric and public culture as well as previous analyses of iconic photojournalism. The aforementioned authors use this foundation as a point of departure to build a comprehensive theoretical/interpretive framework for explaining the role of iconic images in American social consciousness, civic identity, and political affiliation. In order to understand the appropriation of an iconic image in terms of societal reflection and cultural identification this paper reviews how Hariman and Lucaites read appropriated versions of the iconic photograph *Flag Raisings at Iwo Jima.* The study then goes on to review whether similar societal reflection and cultural identification can be determined within the South African context by applying similar principles to read appropriated versions of Sam Nzima's iconic photograph of *Hector Pieterson*. These iconic images were selected because of their respective roles in motivating the societies they were produced for towards a common cause as well as their initial use in support of upholding democratic principles.

The iconic photograph is not about informing the public', Hariman and Lucaites (2007) write; 'rather it offers a performance of social relationships that provides a basis for moral comprehension and response to what is already known'. The significance of this paper, therefore, lies therein that it may assist in reflecting on the possibility that South African 'iconic images' reveal a deeper understanding of the role of the image, particularly Sam Nzima's *Hector Pieterson*, as a frozen moment with the ability to become a crucial resource for reflecting on society at a particular point in time as well as to link to a common source of identity within the South African perspective*".* In its appropriated form the iconic image has the ability to transcend the boundaries of the photographic form to be presented in advertising, cartooning, sculpture, replayed in film and artistically represented. It therefore becomes a malleable visual communication source. The appropriated image feeds directly off the success of the original and therefore to communicate one's message effectively one has to comprehend must know what the potential of that message is. This paper therefore addresses the conference subthemes relevant to design research, design and identity as well as design and culture.

Visual communication and contemporary society

Mitchelle (1994:5) holds the opinion that "… we live in a culture of images, a society of the spectacle, a world of semblances and simulacra". Former American president George W. Bush acknowledged the power of visual communication in his speech to the American people the first evening after the 9/11 disaster: "The pictures of airplanes flying into buildings, fires burning, huge structures collapsing, have filled us with disbelief, terrible sadness, and a quiet, unyielding anger" (in Lester, 2006:4).

Barbie Zelizer (2004:162) refers to the "subjunctive voice of images", as a useful way of understanding the role of the image in memory. "Voice" refers to the dimensions of an image that "propel it to link with other events at other times and places" explaining how the image "takes on an already provided meaning upon its initial appearance." In linguistic terms voice complicates and qualifies the word of action in a statement, it shows the "relationship between the subject and word of action in a statement". Within the visual reading voice refers to the "relationship developed between the spectator and the image – involving state of mind, attitude, temporal and sequential positioning – and to those aspects of the image that help the spectator develop that relationship" (Zelizer 2004:162). The 'subjunctive' voice is "concerned with the capacity to couch what is represented in an interpretive scheme of 'what could be'" (Zelizer 2004:163). The subjunctive voice allows the viewer to "remember whole events through condensed images that reduce complex and multidimensional phenomena into memorable scenes" (Zelizer 2004:164).

It is therefore essential to reflect on "modern culture's capacity to freeze, replay, and store visual memories for large numbers of people – facilitated by museums, art galleries, television archives, and other visual databanks". Appropriation of iconic photojournalism has therefore "enhanced our ability to make the past work for present aims" (Zelizer 2004:161).

As society increasingly moves to communicating visually so the need for increased understanding of visual literacy becomes evident. In Williams and Newton's (2007:vi) opinion:

> "… navigating contemporary culture with conscious awareness of external perceptual influences requires at least minimal mastery of the basic techniques of image production, distribution and consumption. Most important is appreciation for the profound effects of imagery on individuals and the communities in which they live. Visual and media literacy are as important to the 21st-century mind as verbal and mathematical literacy have been and continue to be".

Flag Raisings at Iwo Jima by Joe Rosenthal

Figure 1: Joe Rosenthal, *Raising The Flag on Mount Suribachi*, photographed on 23 February 1945 for Associated Press (Hariman & Lucaites 2007:110).

The image portrayed in Figure 1 was taken during World War II as America strategically planned to take control of the small island of Iwo Jima in order to block food supplies to Japan and create a base from which to bomb Japan's remaining industrial base. Three divisions of U.S. Marines landed on February 19, 1945; the ensuing battle for the island was intense and both sides suffered major losses. On 23 February, a small patrol of Marines fought their way to the top of Mount Suribachi and, having captured the mountain, raised a small American flag. Tedd Thomey (1996:xv) declares that "This was a historic moment, the first time in WWII that an American flag was raised over Japanese territory." Later that morning a much larger flag from a Navy vessel was raised so troops could see it from the foot of the mountain. This second raising of the flag was the one that Associated Press photographer Joe Rosenthal captured on film; two days later the image appeared on the front page of Sunday newspapers across the country and continued to be reproduced in many local newspapers and weekly news magazines (Marling & Wetenhall 1991:70). "The very facelessness of the heroes sanctified a common cause" and provided a ray of hope; "an image that smacked of victory, a picture that seemed to herald an end to the dying [and] went straight to the hearts of American readers" (Marling & Wetenhall 1991:73). The island was declared secure on 16 March 1945 and all resistance had ceased by 26 March after more than a month of fighting.

The image was immediately embraced and within a month became the symbol for the Seventh War Loan Drive in America. Hariman and Lucaites (2007:95) give the following account of the role of the image:

> Instead of a simple message of patriotic allegiance, the iconic photograph of the Iwo Jima flag raising provides a coordinated visual transcription of three powerful discourses in American political history: egalitarianism, nationalism and civic republicanism. The successive overlay of these codes in a single image, along with additional dynamics of visual appeal, foster strong emotional identification with the image.

The appropriation of the image takes many varied forms over successive generations reflecting how

> "… public life is continually redefined in respect to an array of attitudes … this ongoing negotiation occurs in part because public culture is produced through both imitation and improvisation" (Hariman & Lucaites 2007:95).

Appropriation of Flag Raisings at Iwo Jima

The reception of the image *Flag Raisings at Iwo Jima* by the American public was immediate and resounding and according to Hariman and Lucaites (2007:94) "… the photographic print of the flag raising has been reproduced more than any other photograph ever." In 1955, only ten years after the image was first published Joe Rosenthal (cited in Thomey 1996:2) gave this account on the reproduction of the image:

> It has been, it is said, the most widely reproduced photograph of all time. An engraving from it appeared on an issue of three-cent postage stamps. A painting of it was used as a symbol of the Seventh War Loan Drive, and appeared on 3,500,000 postcards, 15,000 outdoor panels and 175,000 car cards. It has been done in oils, water colors, pastels, chalk and matchsticks. A float based on it won a prize in a Rose Bowl parade, and the flag-raising has been re-enacted by children, by gymnasts of the University of Maryland, and as part of an Orange Bowl pageant in Miami. It has been sculptured in ice and in hamburger and, by the Seabees, in sandstone on Iwo Jima … A Washington, D.C. sculptor devoted nine and a half years to the one hundred-ton bronze statue … dedicated as a memorial to all Marines.

Three appropriated versions of the image are briefly reviewed in this section in an attempt to reflect on the imitation and intended reading as a reflection on American culture.

Figure 2: Allstate Insurance advertisement, 2002 (Hariman & Lucaites 2007:110).

Hariman and Lucaites (2007:110) make the following reading of the appropriated version of the image as an insurance advertisement:

> An Allstate Insurance ad at the time of the 2002 Winter Olympic Games provides a highly inventive appropriation that demonstrates how iconic imagery can function as an ideological relay while also transforming the values that are being celebrated. The flag and flagpole have become a hockey stick (reminiscent of the stunning U.S. victory in ice hockey over the Soviet team during the Cold War), and the marines have been replaced by the bare strong arms of anonymous athletes. As the illusion to past military and Olympic victories portends future success, the caption says 'The Right Hands Make All The Difference'. Hands reaching upward in a continued effort and aspiration were a minor yet distinctive element of the iconic design that is artfully replicated here, while the caption extends the image into the commercial present of the insurance company's well-known slogan 'You're in good hands with Allstate'. As the ad traverses historical time from World War II to the Cold War to the present, the referent for the image shifts from military action to athletic training to financial protection … national identity is melded with sport,

masculinity is highlighted, and nationalism is reduced to the red, white and blue motif of fashion design. The formal allusions and alterations in emphasis all serve a seamless suturing of the discourse of war, sports and commerce – and on behalf of commerce.

Figure 3: Still shot of Homer Simpson, *The Simpsons*, season 4 episode 13 "Selma's choice", 1993 (Hariman & Lucaites 2007:122).

Hariman and Lucaites (2007:110) make the following reading of the appropriated version of the image as a molded potato chip in an episode of *The Simpsons* animated cartoon series:
Homer Simpson, the paragon of unfettered desire, is bequeathed a collection of potato chips molded in the form of celebrities … When he comes across a potato chip in the form of the flag being planted on Mount Suribachi, he immediately acknowledges its cultural significance by uttering, 'Uh-oh!' Then, after contemplating it for no more than two seconds, he succumbs to temptation, pops it in his mouth and eats it. Instead of the individual sacrificing himself to the community, we have the communal icon being sacrificed to the most banal of individual desires, the impulse to eat junk food. The image, which began as a sacred emblem of the nation's greatest collective achievement and a model of civic identity, is profaned in potato paste as a symbol of the nation's love affair with commercial consumption and an unbridled and fragmented individualism. Political history has become popular culture, the selfless, heroic citizen has become the acquisitive and consumptive individual; liberal democracy has been reduced to liberalism.

Figure 4: Advertising campaign for South African newspaper *Die Burger*, 2007 (Draftfcb 2008).

The South African daily newspaper *Die Burger* appropriated the image of the raising of the American flag on Iwo Jima in a media campaign in 2007. The campaign challenges readers to form their own opinion, backed by the insights they have gleaned from *Die Burger's* quality journalism (Draftfcb 2008). The image addresses the relationship between the United States and Iraq, in particular the drawing up of a new hydrocarbon law by Iraq (assisted by the United States) that would give Western companies a large slice of profits from Iraq's oil fields in exchange for investing in new oil

infrastructure. Headlines such as *Shock and oil: Iraq's billions and the White House connection*, in *The Independent*, *Rush for 'easiest oil in the world'*, in *The Sunday Times* and *Whose oil is it anyway?* reveal that it was a prominent issue in the media at the time. The oil companies who stood to gain from the new law were based in Italy, the United Kingdom as well as the United States. Referents such as the oil pump and oil field setting, military uniform, and the adopted pose of the iconic flag-raising address contentious issues in the relationship between Iraq and the United States. The soldiers are seen as planting the oil pump, the pose indicative of the association of claiming the area for America, although no direct reference is made to America other than the iconic pose adopted by the soldiers, bringing the political and commercial links between the two countries into question. In the appropriated context the original intention of the image, to protect democratic freedom, is contradicted and Americans are instead identified as willing to use military action for financial gain, claiming what is essentially not theirs.

The three examples of appropriation of *Flag Raisings at Iwo Jima* demonstrate how "public identity is an event-driven process of performance and response, a process epitomized by its most prominent visual artifact, the iconic photograph" (Hariman & Lucaites 2007:136). These images vary considerably in their comment on particular aspects of American society – from nationalism for commercial purposes to commenting on popular culture and the acquisitive and consumptive individual and lastly to identifying and commenting on American culture from an international perspective.

Hector Pieterson by Sam Nzima

Figure 5: Sam Nzima, *Hector Pieterson*, photographed on 16 June 1976 for the newspaper publication *The World* (Artnet, 2011).

The 1976 Soweto Uprising that started on 16 June was meant as a protest by students against the forceful introduction of the Afrikaans language as a medium of instruction in Black schools. It took place at a time when liberation movements were banned throughout South Africa and was organized by the students themselves. The protest started off peacefully in Soweto but soon turned chaotic when the police opened fire on protesting but unarmed students. By the third day the unrest had gained momentum and spread not only to the townships around Soweto, but to other parts of the country as well (South African History Online 2011). Sam Nzima is famous for his photograph of Mbuyisa Makhubu carrying Hector Pieterson's body away from the rioting crowd at the student protest on 16 June 1976. Nzima, photographer for *The World* newspaper, gave the following account: "I saw a child fall down. Under a shower of bullets I rushed forward and went for the picture. It had been a peaceful march, the children were told to disperse, they started singing Nkosi Sikelel'. The police were ordered to shoot" (in Davie 2006). Fellow schoolboy Mbuyisa Makhubu lifted Hector up and, together with

Hector's sister Antoinette, ran towards Nzima's car in which he was taken to a nearby clinic where he was pronounced dead.

According to Hariman and Lucaites (2007:27) photojournalistic icons can be defined as:

> Photographic images appearing in print, electronic, or digital media that are widely recognised and remembered, are understood to be representations of historically significant events, activate strong emotional identification or response, and are reproduced across a range of media, genres, or topics.

By interpreting and applying this understanding to Sam Nzima's image *Hector Pieterson* in a previous study titled *What makes Sam Nzima's image of Hector Pieterson iconic?,* it was determined that the photograph: (i) has been used extensively in print and digital media as well as in numerous other forms of artistic expression, (ii) is widely recognized both nationally as well as internationally, (iii) is remembered as an image that championed the anti-apartheid cause in South Africa, (iv) embodies conventions of personal autonomy and human rights, (v) is understood to be a representation of a historically significant event within South Africa, (vi) has the ability to activate strong emotional identification with the struggle against apartheid, (vii) has the ability to shape moral judgment, (viii) reflects a continuing tension within the public memory between historical accountability, and (ix) reflects the continuing trauma of identifying with a particular cause.

The following section reviews possible societal reflection and cultural identification that can be read in the appropriated form of the image.

Appropriation of Hector Pieterson

Sam Nzima's photograph of Hector Pieterson has been used in countless ways, starting off with its publication in the South African newspaper *The World* on 16 June 1976, and then in British newspapers on 17 June 1976 and thereafter on newspaper pages all over the world to tell the story at the time. The image was subsequently printed on T-shirts and posters, not only to honour and celebrate those who died in the uprising, but also to remember them by recalling their image in support of the struggle that continued. In a massive art-installation project, it was cast onto the walls of the Castle of Good Hope in Cape Town, probably the oldest monument to colonialism in South Africa. Using squares of gray and white duct tape, artist Kevin Brand replicated the tonal dots of the newspaper photograph on the outer wall of the Castle for "Fault Lines: Inquiries into Truth and Reconciliation, " an exhibition held in Cape Town in July 1996. Organizer Jane Taylor explained that it was the purpose of the exhibition "to explore the relationship between history, memory and representation" (in Pohlandt-McCormick, 2011). In 2002 The Hector Pieterson Museum was opened, situated where Hector Pieterson was shot and killed on 16 June 1976 at the outbreak of the Soweto Uprising. According to Darren Newbury (2005), photography defines the very possibility of this particular memorial to the anti-apartheid struggle.

In July 1985 Mathew Goniwe, a leader in the United Democratic Front (UDF), as well as three other UDF members were found dead and 30 000 people descended on Cradock for the funeral and "for a day Cradock was a liberated zone" (Odendaal 1989:131). Government proclaimed a State of Emergency in 36 districts throughout the country, giving the South African police and Defence Force unrestrained powers and those protesting almost guaranteed prosecution. More than 10 000 people were detained in the first month alone. Figure 6 shows a poster protesting the apartheid Police Act. The foreground of the image shows a typewriter typing the words "Hector Pieterson was the first to die in Soweto on 16 June 1976". Making reference to this politically significant day honours those that lost their lives and promotes the idea that the memory of the occasion should spur on the struggle for democracy. Above the paper looms a rubber stamp with the words "police bill". The background of the image is made up of a seemingly never-ending stream of the trio from the Hector Pieterson image removed from their original context and reproduced countless times reducing in size towards, and completely disappearing on, the horizon. The message reflects that even though Hector Pieterson lost his life, hundreds were prepared to follow his fate, essentially signifying that the movement against Apartheid was unstoppable, any resistance against the movement was futile and ultimately doomed to failure. Hector Pieterson has become a martyr for a particular cause and, used in this appropriated form, the image deliberately calls for conflict. The context of use here was a call to rise up against the law affording police widespread power.

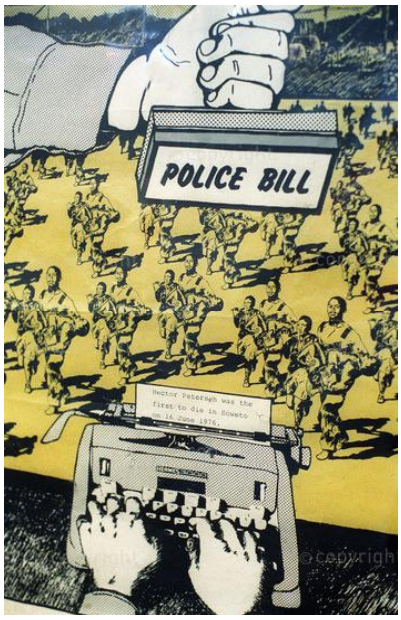

Figure 6: South Africa, June 16, Hector Pieterson, Soweto uprising, Poster protesting apartheid police bill, giving widespread powers, Graeme Williams collection (Africa Media Online, 2011).

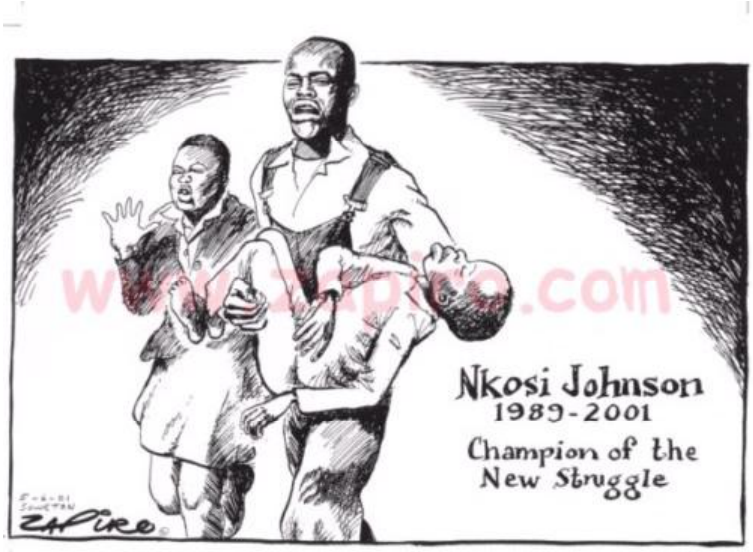

Figure 7: Zapiro, *Obituary Cartoon Nkosi Johnson (1989-2001)* published 5 June 2001 in *Sowetan* newspaper (Zapiro 2010).

Nkosi Johnson born on the 4 February 1989, was a South African child with HIV/AIDS who made a powerful impact on the perceptions of the pandemic and its effects. He died on 1 June 2001 at 12 years of age. Both Nkosi Johnson and Hector Pieterson were thus a mere 12 years old when they died, but their lives nonetheless championed a particular cause. Their deaths at such a tender age have come to represent the courage and strength displayed in varying life-threatening situations by the South African youth.

On 5 June 2001 South African cartoonist Zapiro produced a cartoon of Nkosi Johnson lying in the arms of Mbuyisa Makhubu, taking the place of Hector Pieterson in an appropriated form of Sam Nzima's original photograph. While Hector's sister, Antoinette, still runs alongside the figures the image has been stripped of its original background. Instead the trio of figures is now in a spotlight with the edges of the frame fading into darkness, this visual clue can possibly be read as symbolic of Nkosi Johnson's short life as an aids activist and being a symbol of hope in the fight against this pandemic. The fight against aids, that Nkosi Johnson was an agent for and eventually lost his life to, becomes the

new struggle that Zapiro relates the image to both by appropriating the image of Hector Pieterson as well as using the words “Nkosi Johnson 1989-2001 Champion of the New Struggle.” In this case the context of the image is twofold, the message is to mourn the passing of a young boy but also to rise up and fight the growing death toll of the AIDS pandemic. The appropriation of the Hector Pieterson image allows the implied meaning of struggling against a particular force to become apparent by association of previous significance and appropriation.

Figure 8: Sokwanele, web article illustration, published 15 June 2007 on the website *Sokwanele-Zvakwana* (Sokwanele 2007).

In the appropriated form depicted in Figure 8, the original image of Hector Pieterson has been utilized from a pro-democracy Zimbabwean perspective by Sokwanele-Zvakwana, “a peoples' movement, embracing supporters of all pro-democratic political parties, civic organizations and institutions” (Sokwanele 2007). The image illustrates an article *Youth Day: Remembering Soweto 1976, and thinking of Zimbabwe's youth in 2007* and relies directly on the original intension of the Hector Pieterson image as well as previous appropriations situating the image as a voice against oppression. The captions above the two image frames liken the oppression that South Africans struggled against in 1976 to what Zimbabwe was experiencing in 2007. Two frames fill the majority of the image plane: on the left are placed the original Hector Pieterson image, to the right may be seen an identical frame with the words “error: image not found; reason: the Zimbabwe government is murdering news photographers”. In the accompanying article Sokwanele (2007) implores the reader to “look at the picture of Hector, and think about the power it has to tell the truth, and to think of journalists like Edward Chikombe who put their lives at risk trying to capture the truth” when reporting on the oppression in Zimbabwe.

By using the Hector Pieterson image in this way, the importance of photojournalism is emphasized and by commenting on the fate of photojournalists in Zimbabwe the role of the photojournalist is emphasized. Together the image and text become a champion in the cause of the photojournalist and freedom of speech, while at the same time referring to a more universal oppression in Zimbabwe. The success of the image as a vehicle for struggle against the apartheid laws that oppressed Black South Africans has ironically been appropriated to champion the cause of Zimbabweans against the tyranny of their first democratically elected leader Robert Mugabe.
While the three appropriated Hector Pieterson images may not vary as extensively as those of the Iwo Jima appropriations, they do still cover a wide variety of commentary. The first encourages action against oppression spurred on by the sacrifice and example of 16 June 1976, the second encourages unity and action in the struggle against the Aids pandemic while the last appropriation uses the example of Hector Pieterson as a champion against oppression from an international perspective.

Conclusion

Hariman and Lucaites (2007:136) give a simplistic understanding of iconic photojournalism: “What appear to be distinctive images of historical events prove to be markers of a common yet complex way of seeing and acting towards others”. Zelizer’s (2004:164) “subjective voice of images” in visual

communication asserts that the viewer is able to memorise "whole events through condensed images that reduce complex and multidimensional phenomena into memorable scenes". Considering these two statements and taking into account the appropriations of iconic images discussed in this paper, it can be theorised that visual communication through iconic photojournalism allows culturally specific groups of people a common understanding and memory of an event that they experienced through reading the iconic image. By reflecting on the brief discussion of international appropriation of images it can be proposed that cultures can be internationally identified by the images that they choose to embrace as iconic, as well as the possibility that a certain culture may identify with another culture's iconic images.

This paper therefore concludes that appropriation of iconic photojournalism may be used to affirm the embracing of a common cause, criticize cultural beliefs and practices in both the original and appropriated context of the image, as well as to approve and negotiate diverse forms of identity and affiliation in a democratic society. The Hector Pieterson image, as a documentation of a historical event, provides a continuing tension within the public memory between historical accountability, continuing trauma and identifying with a particular cause. At the same time the image provides contemporary South Africans with a platform to question morals, address inequalities, champion new societal challenges and provide a form of cultural identity within present-day South Africa.

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Short Biography

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ENHANCING LEARNER PERFORMANCE IN DESIGN EDUCATION FOR DISADVANTAGED STUDENTS: THE CASE OF DIPLOMA PROGRAMMES IN ARCHITECTURE AND JEWELLERY DESIGN AND MANUFACTURE

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Abstract

Participation of students from disadvantaged backgrounds in South African higher education has been below acceptable levels and recent reports indicate that it is still in decline. Much has been discussed about the link of under-preparedness to poor performance of students. However not much has been discussed about under-preparedness of universities curricula for teaching an evolving student population in the design disciplines.

This paper explores the implications of an increasingly diverse student body for curricula of design disciplines in higher education institutions. The paper uses the University of Johannesburg's jewellery and architecture programmes to discuss curriculum change that has the capacity to enhance performance of students. The paper argues that student background can be used to develop responsive curriculum which contributes to effective learning for students in design disciplines-jewellery and architecture. The paper suggests a curriculum framework, based on students' spatial origins, to developed teaching and learning practices that would enhance student performance and chances for success in their studies.

Key Words: *diversity, under-preparedness curriculum, success-rate, graduation rate spatial background, student performance constructivist theory, jewellery and architecture*

> The strength of… (education) is its ability to challenge its own truths by presenting alternative possibilities. That forces you to justify your own ideas, and that competition of ideas is what creates excellence. "(Friedman 2001 in Brown and Moreau 2004:7)

Introduction

One of South African government's main goals in its quest to establishing a democratic and open society is to increase access and participation in university education for the younger population, particularly for deserving students from poor backgrounds Studies have shown that only 16% of South Africa's young have access to higher education (Yeld 2010:27). In addition government is concerned at the low graduation rates (44%) of higher education institutions given the low rate of participation (Scott and Hendry 2007 in Yeld 2011: 26). The success and graduate rates of students have been singled out as problematic.

Lack of preparedness for studying at higher education institutions of students has been cited as a major contributing factor to poor success rates. A further problem is that students from poorer backgrounds are not likely to complete their studies on time and if they complete their studies at all. A number of support measures have been suggested to address the problem. These include integrative curricular changes, extended curriculum and external academic support centres. The loudest call in this instance has been to increase the duration of the study period, typically from three year to four year diploma or degree studies. This is one approach to solving the problem that has its own merits and demerits. This is not the main discussion of this paper. This paper argues that in addition to other support measures for increasing participation in higher education, there is need for radical change in the way knowledge is constructed and delivered to students in higher education institutions. The paper uses the jewellery and architecture diploma programmes to illustrate how teaching and learning experience of students from diverse backgrounds can be enhanced in order to achieve higher success and graduation rates. The paper makes the assumption that success of students in higher education

can be increased if the knowledge is constructed and delivered with reference to the context from which students originate.
The University of Johannesburg's(UJ) draft document for institutional transformation for the next decade, states that one of its objectives will be to promote an academic mind-set that is open to new ways of teaching for a diverse student body(UJ 2011a:5). This will be achieved by revising existing teaching methods and developing responsive curriculum appropriate to context. It is this transformation that will contribute towards attaining the status of a truly modern African City that UJ desires (UJ 2011b). This paper begins to explore how programmes can achieve curriculum change for the creation of deep learning experiences for students within a cosmopolitan context.

Considering the aforementioned, the current status quo at UJ's Faculty of Art, Design and Architecture (FADA) represents a different reality. In general the success rates of diploma students in the FADA building has been falling. Statistics for the years 2008 to 2010 suggests that performance of students of colour (African, coloured and Indian) is diminishing (see Table 1).

Success rate	**African**			**Coloured**			**Indian**			**White**		
Course level	2008	2009	2010	2008	2009	2010	2008	2009	2010	2008	2009	2010
First Year diploma	71%	66%	67%	86%	63%	60%	79%	81%	67%	89%	82%	84%
Second year diploma	88%	88%	85%	85%	90%	91%	91%	87%	93%	92%	89%	96%
Third Year diploma	86%	75%	83%	88%	94%	95%	91%	90%	84%	93%	88%	93%

Table 1 Source: Faculty of Art, Design and Architecture – Annual Report 2010

FADA has a 51% graduation rate which means that almost half of the students of colour who enter FADA drop out or do not finish their studies on time. In 2010, at first year level, both African and Indian students had a success rate of 67%, while coloured students were at 60%. Their white counterparts had a comparatively higher 84% success rate. This drop in success rate is significant it must be understood in terms of actual numbers of coloured students in the Faculty. In total students of colour make up 48% of all students in FADA but the problem is, as can be seen from the table, that they have considerably lower success rates.

This evidence suggests support for the theory of unpreparedness for university students from historically disadvantaged students. A recent survey (2011) conducted by the Academic Development & Support centre at UJ, shows that approximately 75% of students at UJ hail from low SES background. The proxy Indicators of the socio economic status (SES includes academic qualification of parents, financing of studies and whether learners are commuting. According to Letseka (2008:6), the majority of disadvantaged learners in South African institutions are black:

> "…on average, 70% of the families of the higher education drop-outs surveyed were in the category "low economic status". Black (African) families were particularly poor…..Yet many of the students coming from these families depended on their parents or guardians for financial support (Letseka, 2008: 6)

The following paragraphs further discuss the race/class relation in our current context.

Educational backlog and the nature of under preparedness

During the last century, South Africa has witnessed a number of major political changes which has had direct effects on the higher education (HE) landscape as it exists today. Apartheid, officially instituted in 1948 by the National Party, resulted in a South Africa that was one of the most unequal societies in the world (Morrow & King, 1998).
The implementation of new policies to address educational inequities by the new South African government ensured that institutional floodgates where opened to provide access to the previously marginalised. However contentious, this measure has radically changed the profile of the student body at universities: from mostly homogenous to highly diverse. Diversity here refers to complex

relationship generated by the race, class and spatial origin dynamic; and its influence on educational outcomes.

Even though black student enrolment increased by 80% (from 191 000 to 343 000), throughput rates were dwindling (Jansen, 2004). High attrition of black students has generated much debate across the HE landscape about how to improve the through-put rates. Extended programmes, National Bench Marking Tests (NBT) have been adopted by various HE institutions in order to enhance the learning experience and of students. Thus much of the debate has been about integrating extended programmes into main disciplinary programmes. In many ways these support measures have been directed more towards improving students' skills prompted, more recently, by the Minister of Higher Education Dr Blade Nzimade's views that " …universities have to work with what(students) you've got!"

Less discussed in HE at programme level, has been the response of universities in exploring existing curricula responses to a changing context and increasingly diverse students body. Such a holistic, broader, response is necessary because it begins to address preparedness of academics to teaching in changing circumstances in the South African HE landscape. A holistic approach to unpreparedness in HE is the main argument of this paper, necessary to enhance learning and student throughput rates.

Lack of preparedness

Lange (2007: iv in Yeld: 2010) argues that lack of preparedness is characteristic of both students and staff- that the process and experience of teaching and learning is steeped in tradition and doesn't taking into account the diverse multicultural nature of its students. One way in which diversity of the students is reflected, is in the manner in which the school system has prepared students for higher education. Common references to this diversity is reflected in the manner in which students are referred to or classified i.e. those from Model C school, township schools , inner- city schools and rural school. Generally it is accepted that schools with resources expose their learners to a broad range of career prospects. Resource limited schools focus on the main subjects like languages, sciences and to a lesser extent on art subjects which demand huge resource investment.

Thus preparation for teaching and learning experience in the universities becomes critical as one may come to realise that a unitary education approach could favour better prepared groups and disadvantage the less well prepared students (Yeld 2010:12). Learners who hail from low SES are very likely to attend poorly resourced schools in their vicinity. The current C2005 OBE system is considered resource heavy and inappropriate for the many deprived schools inherited from our previous regime (Taylor & Yu, 2009). More often than not, the lack of resources and broader sociological situation (crime, hunger, unemployment) render these schools unable to instil the levels of knowledge required for success at academia. These learners gain access to HE but lack the skills levels of their better prepared peers, who gained essential but expensive practical experience in labs, workshops and studios.

On the other hand, under-prepared lecturers lack exposure and teaching experience with diverse student bodies. As previously mentioned, the curriculum, teaching content and very likely pedagogical approaches practiced by teaching staff are outdated (Scott, Yeld & Hendry, 2007). Teachers are not equipped to deal with a diverse, multilingual and 'variously exposed' student body.

Within the art and design fields, lack of preparedness is a result of students not being exposed to these fields at all levels of schooling. This dearth of art and design knowledge in the wider South African context is illustrated by Cadle (2009) that only 12 schools out of 337 schools in Nelson Mandela Municipality offered art as an option. Further evidence of this lack of exposure to art or design can be seen in the schools of Soweto in Gauteng, which have only one secondary school offering art at matric level (Phosha-Personal communication 2011).

Preparedness for studying disciplines like architecture and jewellery for students from poorer communities is severely limited and this has an impact on their chances for entering design disciplines and further chances of succeeding in such programmes. In such a scenario it becomes critical to understand the background of students with a view to make learning more meaningful and perhaps

relevant. It is the gist of this paper to show how jewellery and architecture Technology programmes at UJ can be structured to heighten the experience and success rate of students.

Defining the Diverse Background students

As previously mentioned, diversity is attributed, in the first instance to varying levels of exposure and secondly to differential levels of academic readiness. Students in the two programmes mainly come from Gauteng Province (UJ Student Survey 2011) and can be classified mostly as urban dwellers. Typical students that come into the Jewellery and Architecture programmes can be described as coming from five spatial backgrounds. Firstly, there are the urban dwelling students who come from the formal townships establishments that normally are located in the periphery of cities. Such environments are well serviced in terms of high schools.

Secondly there are urban dwelling students that come from informal settlements located usually on the edges of townships, which are often high density settlements with little or no basic facilities and very distant from educational institutions.

A third type of the urban dwelling students are mostly local and international immigrant population- they typically come from the inner-city environment which in most cases have little in terms of government educational systems. Instead they rely on private educational systems set up in buildings that were not intended to be schools.

The fourth group of students come from the suburban settlements that are well served by good schools and its supporting infrastructure. They may have access to artistic environments and have basic knowledge for observing art, design and detailing the environment.

The last group of students come from rural areas with educational systems that are varied. Some students come from affluent farming communities who went to good schools. These may have had good exposure to career opportunities in art and design. The other rural group are poorer rural dwelling students with severely limited educational facilities. The experience of such students gives them little exposure to the wide selection of careers of choice especially in art and design. Typical schools in this category may be the “Farm Schools”. Exposure to art and design is such is minimal due to limited resources.

Although this paper has outlined five categories of students, they are not exhaustive. The paper uses these categories as a point of departure from which the dialogue between background and curriculum can begin. These categories could also be used to explain the level of preparedness of various students for higher education learning. It is obvious that students from the suburbs are better prepared than those from the poorer rural and informal settlements in general. The township based students still lag behind the suburban students in terms of preparedness. It can therefore be argued that the type of curricula for jewellery and architecture programmes at UJ, with its diverse student body, needs to be one the responds to differently prepared students if it is not to advantage one set of students over the others (Yeld 2010:27).

The above categories of living environments define the contexts that, in a covert manner, socialise potential students into various careers. The chances of students from these contexts to enter design professions like jewellery and architecture varies. Depending on their background, students come into learning programmes with varied scope of what the profession entails and wide-ranging initial skill and knowledge with which to enter their studies. Chances of completing studies on time are also varied, favouring the better prepared students if students are at all able to complete them (Yeld 2010:12).

While some of these students’ background contexts may be perceived as inhibiting, this paper argues that these environments can serve as critical informants to the design of curricula in design schools in universities in general. The paper argues that such curricula is dynamic and has to be informed by constructivist theory in order to respond to these contexts and to the needs of a diverse student body.
The theory of constructivism, developed by Swiss psychologist Piaget, argues that learning is constructed on previous knowledge. It has often been utilized as an umbrella term for a number of approaches applied across disciplines. The underlying principles are based on the view that learning as an action of constructing (not receiving knowledge); while instruction is the process of facilitating

(not transferring knowledge). Furthermore, learning is viewed as an activity of understanding information within a situation. In other words, a context or the background of the learner has been cited as an essential variable within the learning activity. Duffy and Cunningham (2008) quote Rorty (1991) who argues that 'knowledge is a construction by individuals and is relative to the current context (community)'.
This paper therefore calls for the alignment and implementation of constructivist theory within the relative disciplines -jewellery and architecture in order to support learning. Broadly speaking, it argues that this approach will simultaneously address the current homogeneity of many design curricula. A recommended constructivist methodology, deemed appropriate in this instance, is known as situated learning. This framework informs one of the central arguments of this paper: the integration of relevant content and stimulus obtained from the aforementioned learner backgrounds.

In this way the chances of success of students are enhanced, as students are empowered by using their contexts to create new designs, be it in jewellery or architecture because of the emotional connection to their problem of their context (Conrad 1978:34, Cuff: 1991). Further because the curricula builds on environments that students are familiar with and understand, it encourages students learning process than teaching (Sara 2000:4). Success in the design field can perhaps be drawn from the fashion design labels of young black designers from the Ghetto's in the USA (Bond in Saunders et al…(1996). Locally in South Africa we have seen the clothing brand Loxion Kultca, Ma gents, Smarteez, Kofifijeans and Nubian Prep street fashion. These brands were started in the Soweto Township and were inspired by such environments.

Implications of background for curricula

There are possibly two ways in which to answer the question. Firstly, on a wider scale, the student's backgrounds provide the framework around which knowledge in architecture and jewellery can be constructed. Studying the environments evokes what is called the curriculum design through a "Social Problems" approach (Conrad 1978: 32). In this framework an attempt is made to package the discipline knowledge in terms of problems that are abound in particular contexts with a view to equip students with "tools" with which to solve social problems in their context. Such curricula are not static but are transitional in nature and as problems are solved so does the curricula evolve.

Secondly, at a personal scale student's background is important because it suggests the covert knowledge that the student may have about the discipline that they wish to study. In ideal cases, such as well-resourced school, the potential student could have had some informal contact with a relation or professional who is engaged in a similar profession. The benefit of that initial contact is an emotional connection and a powerful motivational force between the student and the profession that inspires more than just the interest (Conrad 1978:34). Such students will exhibit a heightened sense of confidence and awareness of the discipline they are studying as they are certain about the career opportunities of their area of study. These students will most likely succeed in completing their studies than other students who might be first generation participants in a discipline.

For the first generation students, studying the disciple is a like shooting in the dark, always searching to understand where their studies may take them. Frustration during studies is not uncommon and chances of failure are high. It is this failure that design departments must address, not through adhoc measures, but through designing curricula that responds to the needs of the students. The needs of such students are perhaps not only of discipline knowledge that reinforces traditional content, but rather of that which uses the context to create learning experiences that allow students to develop intrinsic values with which they can use to explore and critic their environment . Cuff's (1991) observation about architectural education is perhaps apt when she notes,

> "…By de-emphasising context, much knowledge and training that would be useful in architectural practice is unattainable."

In terms of jewellery and architecture the five contexts discussed above describe infrastructure and environmental problems and opportunities for students to engage with as they construct the future South African environment. All five categories have social and environmental problems and possibilities which students in this country will have to engage with as they move on to become professionals. It is our belief that once *all* students are able to engage with these contexts, they would develop not just creative skills but also critical thinking skills to use to evaluate their contexts and provide relevant responses to their context. The five contexts also create the basis for previously

untapped niche markets. It provides all students with the opportunity to be exposed to, explore and engage in both familiar and less familiar but applicable environments. We believe that the 'widened' approach to curricula is important for the development national identity and citizenship. Furthermore, acknowledging and contextualising the relevant disciplines is a means of promoting our unique 'South Africaness' and establishing new design identities.

Curriculum in transition: Creating meaningful learning experiences for all students in Jewellery and Architecture programmes

This paper suggests the destabilisation of the unitary educational processes that are followed in the jewellery and architectural technology programmes so that their curricula begin to respond to the students' context. The proposed curricula are student-centred- i.e. Learning approach considers the context of all students. In the above sections we have analysed the context from which students in design discipline come from. In this section we will show how the context can begin to inform the curriculum of the design disciplines of both jewellery and architectural technology. The idea is that the change in curriculum, while enhancing learning through an emotive response to learning, the programme will be addressing the future demands of the professions

If questions and assignments in curricula are shaped around the contexts in which students originate and are familiar then students are more likely to succeed (Cuff: 1991, Sara, 2000). The architecture curriculum could be shaped around the environmental and spatial issues of these contexts. In this new curriculum students will enter a process of constructing reality in exchange with others by taking the real life experiences of other students to challenge their environment and learning (Wallertein 1987). Together students develop a set of values that are developed with other students in a particular context. This would foster critical and independent thought in the students. Learning that is student centred engenders effective learning, as students build upon their experience of their local environment by relating it to new information learnt in the university. Brown and Moreau (2004), (Sara 2000) argues that this results in a deeper understanding of the discipline of architecture and an enhanced learning process than simply teaching.

Proposed Changes to in Architectural technology curricula to enhance student performance

The core knowledge areas for architecture technology programme at UJ can be organised into five learning themes (FADA Handbook 2011:16). The table below explains how each of five students background environment can be interpreted into an architectural curriculum framework organised as follows: Design, History and Theory, Technology, Communication Skills and Management. Only three knowledge areas namely Design, History and Theory, Technology are discussed in this paper. This decision was informed by the fact that these are the three main themes that form the basis of curriculum assessment by the South African Council for the Architectural Professions (SACAP) which validates all architectural programmes in the country (Steyn 2010:22). This paper does not discuss the other two themes namely Communication Skills and Managements because they are fundamental knowledge areas that are generally applicable to any of the five background categories.

	Townships (formal)	**Informal settlements**	**Inner-city environment**	**Rural areas**	**Suburban settlements**
Design	Housing typology Density Layouts Contemporary Renewal programmes	Upgrading (de)Densification Basic infrastructure	Reuses of old buildings. Precinct Development Mixed use development	Cultural Architecture Farm Building typologies Densification	Housing Typologies Densification Mixed use development
History & Theory	Ancient History up to Modern movement. Apartheid laws Native(Black) Urban Access Act Group Areas ACT	Migration Immigration and the shape of the cities. Contemporary city problems Environmental awareness	Ancient cities Urban regeneration Urban decay and renewal	Traditional African settlements Forced removals and its farm landscape	New Urbanism Sustainability Contesting Modernism and constructing the future Expanded Public Works Programme

Technology	Conventional building materials	Re-use and recycling of materials	Complex multi-storey construction methods	Traditional/ Building materials	Sustainable materials

Table 2: Knowledge Framework showing learning material to be covered under each student's background in the architecture curriculum.

From the above table it is evident that it is possible to organise an architectural technology curriculum using students' environmental background. This is a departure from the traditional architectural curricula which is organised in chronological manner based on, disciplinary knowledge, design paradigms and canonical architectural ideas. It is the argument of this paper that the proposed radical arrangement of curriculum based on student background, will enhance students learning as they are able to apply their knowledge to their context. Such testing will enable students to develop new values about architecture and their environment. We contend that it is only in such contexts that "real" learning can be enhanced.

	Townships (formal)	**Informal settlements**	**Inner-city environment**	**Rural areas**	**Suburban settlements**
Themes and research questions to inform Design solutions (Related to Design Management)	• Market research and profiling • Background/environment study (See design History below) • Unpacking and applying Theories on relevant 'Visual Culture', Genre, Trends, Style and Identity (eg. Kwaito, Diva, Ghetto chic, Street fashion, DIY fashion, Afro Vintage, Hip Hop, low end commercial, High end commercial, haute couture) • Relevant Design techniques and procedure • Costing and quotation				
Design History & Contextual studies (foundation for research)	Ancient History up to Modern movement. Apartheid laws Native(Black) Urban Access Act Group Areas ACT	Migration Immigration and hybridization of design elements. Contemporary city Environmental awareness	Ancient cities Urban regeneration Urban decay and renewal	Traditional African settlements Forced removals and its farm landscape	New Urbanism Sustainability Contesting Modernism and constructing the future Expanded Public Works Programme
Technology-Material and techniques (for realisation as a product)	Fusion-generating new genre	Re-use and recycling of materials	Broader Northern African materials and methods	Traditional South African/ manufacture materials and methods	Sustainable materials

Table 3: Knowledge Framework showing learning material to be covered under each student's background in the Jewellery curriculum.

Within Jewellery, the aforementioned contexts provide a framework which is constructed from common themes. These themes are informed by a range of contemporary and historical visual cultures. The themes provide broad but pertinent visual content, which can be researched and referenced as inspiration in the applied processes of design. Furthermore, the three-dimensional realisation of such designs (in the form of jewellery products) is also addressed by the framework. It encourages the use of indigenous technologies in its previous and current forms, as well as equivalent international technologies.

Conclusion

The paper has highlighted the problem of lack of preparedness for university learning as a key factor in ensuring student success at higher education institutions. It establishes that the problem affects

mostly students from poorer backgrounds. The paper remarks on the influences and effects of this central issue on design careers.

An implicit and controversial issue underlying this research is that of covert racism that is perpetuated if curriculum programmes do not evolve and address the demands of an increasingly diverse student body. The paper suggests a role for practicing academics in the implementation of national and institutional policy which addresses 'equal access to education'. Educators who do not acknowledge and embrace the need for diversity in teaching approaches may be knowingly or unknowingly be perpetuating existing inequalities in South African HE institutions.

The paper proposes that one of the ways of enhancing performance for students in general is through the change of curricula of both jewellery and architecture. The paper has examined this problem from a contextual point of view. It has identified five critical environments from which students originate and has used it to develop a framework for curricula that will enhance students learning.

The paper first and foremost urges critical engagement and review of the proposed frameworks within a range of settings. It secondly recommends further study of the application of constructivist approach in the diverse context of South African design faculties.
Finally it is important to note that while paper set out to address enhancing performance of students from poorer backgrounds, the proposed curricula addresses enhancing performance of students from all South African backgrounds.

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Short Biography

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DEVELOPING A DISCOURSE IN FASHION DESIGN WHAT IS RESEARCH FOR FASHION DESIGN?

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Abstract

The concept of fashion has attracted a great deal of interest from a variety of academic disciplines such as history, culture, anthropology, sociology, psychology and semiotics to name a few. This has often resulted in tension between different approaches. At a conference held in England in 2009 concerning the future of fashion studies, a number of fashion scholars such Rebecca Arnold, Christopher Breward, Professor Stella Bruzzi and many others, deliberated on the methodologies and research agendas that have emerged in the growing research area of fashion studies. It was noted that although fashion studies has gained momentum over the last decade as an interdisciplinary field of research, fashion as an academic subject has remained weak. Research activities in the field of fashion studies include the contribution of authors from other fields of study that preserve their own disciplinary identities (Riello & McNeil 2010:7). In order to develop the area of fashion studies as an interdisciplinary field of study that is acknowledge by the academy, McNeil (2010) notes that key areas of concern need to be addressed. These areas include the development of research that combines theory and history with the development of material products resulting in a methodological richness. This poses a challenge for the development of fashion studies as a research area as students are required to have practical experience in the skills required in making a product as well as an understanding of historical and theoretical practices that encompass fashion as a broad and complex social phenomenon.

In order to achieve this, an opportunity arises for fashion design education in South Africa to engage in a discourse that promotes research that emphasises issues of materiality combined with theoretical and historical constructs. Recent research activity in the department on masters and PhD level has emphasised the above. This paper is a discussion document by two lecturers from the department of Fashion Design, Faculty of Art, Design and Architecture at the University of Johannesburg, on the future and development of fashion design studies and suggests that design thinking provides an important basis on which further discussions on fashion design education may be pursued.

Key Words: *fashion studies, design, fashion design, fashion education*

The nature of fashion in its broadest context is a complex social phenomenon. The vast body of existing fashion literature approaches fashion studies from a variety of disciplinarily persuasions that argue theoretical frameworks that lie outside of the domain of the practice of fashion design as an applied field of design. This has resulted in an imbalance between fashion theory and fashion practice which is often confusing for students of fashion design when embarking on research activities. There is a growing awareness, both locally and internationally, that fashion design education needs to extend the entrenched model with its strong emphasis on practical concerns and studio activity to include research activities that will raise the profile of fashion design within the academic arena. This paper suggests that there is an opportunity for fashion design education in South Africa to engage in an academic discourse that promotes the development of research and supports the reinsertion of the nature and process of design into the discussion of fashion. Christopher Breward (2003:15) argues that central to any definition of fashion is the ability to answer questions of 'intention, style, craft and materiality". The intention of this paper is to provide a platform around which further discussions on the academic development of fashion design may develop and is divided into three thought processes. In the first instance a brief overview of the concerns about the future of fashion studies is elucidated. The second aspect follows with a discussion on design thinking as a productive means to establish an orientation for the practice of fashion design as an applied field of design. Lastly, how the first two impact on fashion design education is discussed.

When engaging in literature concerning fashion it becomes evident that the study of fashion is presented as a complex social phenomenon taking on different meanings for different academic

disciplines where the interests of diverse fields of study are pursued. Historians focus on the origin and evolution of dress. Anthropologists study the role of culture as having an impact on fashion and dress. Sociologists address issues of collective behavior when adopting a style of dressing and Social Psychologists answer questions of personal motivation that underpin dress behavior. Although many academic disciplines use clothing and dress as the unit of analysis when studying fashion Yuniya Kawamura (2005:1) argues that fashion and clothing are two different concepts which can and should be studied separately. She continues by stating that clothing, as a material object, cannot be considered as fashion, which is a belief system, unless it has been adopted by a large portion of society. Fashions exist in many aspects of social life and can be treated as a material object, an abstract idea, a social phenomenon, a system, a cultural value or an attitude (Kawamura, 2010). This view is supported by Ingrid Loschek (2009:2) who acknowledges that fashion is an abstract idea that is negotiated within society. She however continues by stating that in the absence of the designers 'voice' it is the task of fashion theory to recognise and evaluate both the practical aspects of creative design, the structural features of clothing as well as the social contexts of a culture in which fashion develops (Loschek 2009:7).

Although the phenomenon of fashion has been used as an example to argue theories from other disciplinary persuasions, fashion studies have emerged as a growing area of study within its own right. At a conference held at the University of Warwick in England in 2009 concerning the future of fashion studies the following key areas of concern were discussed: the challenges of navigating an array of theoretical positions; how borrowed theory is often used without real understanding and depth; the need for fashion to acquire a reputation within the academy; neglecting the development and promotion of scholarship; the lack of research history in design schools; the development of ways of teaching theory that is rich in history and is relevant to theoretical content; the over historicism of fashion neglecting the technological and global meaning of fashion relevant to the twenty-first century. During the conference Dr Giorgio Riello noted that although there was tension between opposing views on fashion studies this was positive in that it initiated a dialogue which is better than a state of indifference (McNeil 2010:106). This provides an opportunity within the growing area of fashion studies to establish how fashion design as practice may contribute as being part of the interdisciplinary nature of fashion studies. Christopher Breward (2003:14) notes that the growing area of fashion studies is multi-disciplinary in that it presents fashion as the outcome of "the process of creative authorship, technological production and cultural dissemination". He continues by stating that the re-insertion of the nature and process of design into the discussion of fashion studies provides the means to reconcile "fashion as idea, object and image" (Breward 2003:15).

In order to understand fashion design as discipline, one needs to first discuss design in a broader context. As a discreet and integrative discipline, design has emerged from a discourse equally diverse as that of fashion, this view sees the field of design as a unitary concept that encompasses and amalgamates all the design disciplines (Margolin 1989). When reviewing the variety of definitions and descriptions of designing, John Chris Jones (2009:77) a Welsh designer with extensive experience in the field of design methods, notes that there seem to be as many different kinds of approaches to design processes as there are writers in the field. Jones (2009:78) suggests that possibly a firmer basis on which to define the act of designing would be to look at the end result of the chain of events that begins with the sponsor's wish and progresses through to "the actions of designers, manufacturers, distribution and consumers" to the ultimate effect that the designed object has in the world at large.

Richard Buchanan and Victor Margolin (1995a:xvii) state that design (as product planning) is a professional activity whose outcome can be affected by an analytical approach to method, whereas design (as product) is evident of values that have been instilled in it through a number of strategies. John Walker (2009:42) mentions that design has more than one meaning and can refer to:

- process (the act of designing);
- the result of that process (sketch/model/plan);
- the result of the process (product); and
- an overall pattern of a product (a design of a building).

Ben Highmore (2009:4) refers to design as a process-oriented concept rather than referring to it as a product. He mentions that design shifts between a multiple of forms ranging from the process which results in a final product to an active sense of moulding and shaping the world we live in. He further describes design by using process-focussed words such as "negotiation, orchestration and activity".

According to Walker (2009:43), design can be viewed in various contexts and be associated to disciplines such as fashion, architecture, jewellery, communication and engineering, to name a few.

In 1995 theorists Buchanan and Margolin (1995b:x) noted that a tendency had arisen during the twentieth century to disregard design as a subject worthy of serious study. They acknowledged that there was a need to broaden the discussion around design in order to "clarify the nature of design and improve common understanding of its cultural significance". Buchanan and Margolin (1995b:xii) argued that design was [and still is] a central feature of cultural and everyday life that manifests in activities or services "that are designed for the purposes of work, play, learning and daily living".

Design is regarded as a distinct discipline with its own area of research with the intention to develop a body of knowledge. Buchanan, Doordan and Margolin (2010:1) mention that design needs to respond to current social, economic and technological imperatives and needs to be reactive rather than proactive. It is therefore essential that design activity needs to be embedded in the discourse of design, what design is now and what it will be in the future. In turn, as noted by Buchanan et al. (2010:2), how we think of design has implications on how we study it, how it is taught and how we practice design. In March of 2008, the Kyoto Design Declaration was signed (Sotamaa 2009:51), emphasising the role of design in a sustainable and social responsible world. This in turn places an emphasis on design thinking and design research. The Kyoto Design Declaration was signed by members of the Cumulus Association in March 2008 and is an international body consisting of 140 universities and colleges of art, design and media, across the globe. The declaration marks a commitment by the members of the Cumulus group to share global responsibility for building sustainable, human centred creative societies (Somataa 2009: 51).

Bucahnan et al. (2010:2) argue that design research can therefore be divided into two streams of thought. In the years leading up to the 1980s, design thinking (and research) was directed at 'making' [products] and included design studies, design literacy and design criticism. The focus in this area was firstly from a philosophical, anthropological or psychological point of view, and secondly had social meaning and included the consequences of the process or product. From the 1990s onwards, design thinking and research broadened its approach to include how products are made; in other words design as practice.

By the late nineties, research in design was divided into three stages. Stage one, as described by Buchanan et al. (2010:1), centred on *formation of design*, in other words, the place design had in the world and design integration. The second stage, according to Buchanan et al. (2010:2) focused on *fabrication*, and can be described as the translation of abstract ideas (process) of products. Most design research was (and still is) done in this area, and less research focussed on the role of the designer in the form making process. The second stage led to the four orders of design thinking. The four orders, as described in Buchanan et al. (2010:3), are as follows: The first order relates to communication and the delivery of information through images and symbols. The second order focuses on the construction of tangible artefacts or products. The third order is about the planning and implementation of actions, process or services. The fourth order deals with organising the complex wholes around us and provides systems and environments of human culture. The third stage is *evaluation* (assessment of functionality) and relates to the values of practice and drawing out the values in relation to what might be designed or the consequences of the practice of design.

Wolfgang Jonas (2010:37) in an article in Design Studies in 2001 mentioned that design in research terms was an underdeveloped research area and used borrowed theories to argue from. Then, and now, there is a danger in doing so, in that the borrowed theory often gives an isolated focus on the field of studies. Jonas mentioned (2010:38) that there is a necessity to continuously develop theories for any discourse, as to constantly use other theories (borrowed theories) from other disciplines can weaken the discourse and value system and that weakness can lead to a loss in communication or ability to communicate with other established disciplines such as philosophy or culture. In addition, Jonas (2010:39) mentions that in order to build a theory for design one needs to consider the practice of design, and thus develop a theory for the practice.

According to Jonas (2010:39), design research can be divided into the following paradigms of thought as depicted in figure 1. The first is *backward orientated* and relates to reflecting, interpreting and causal reconstructing of design. This therefore speaks to theory and can be done by anyone from any discipline and research from this paradigm becomes research *about* design. The second paradigm of thought is *forward thinking*, and relates to practice. Because this paradigm centres on the practice it can

only be described by practitioners in the field, the designers, and therefore research from this paradigm is described as research *for* design. According to Jonas (2010:48-49), design research is project orientated where the design process becomes the subject of design research and argues that the design practice and the process of design research are interrelated. These areas are not always clear cut, sometimes the division between design practice and the practice of design research are blurred, yet together they describe the discipline. Buchanan et al. (2010:7) reiterates this notion and mentions that the meeting ground of theory and practice in the twenty-first century is in the designed world of images, objects, activities and environments.

The above viewpoints are summarised in figure 1.

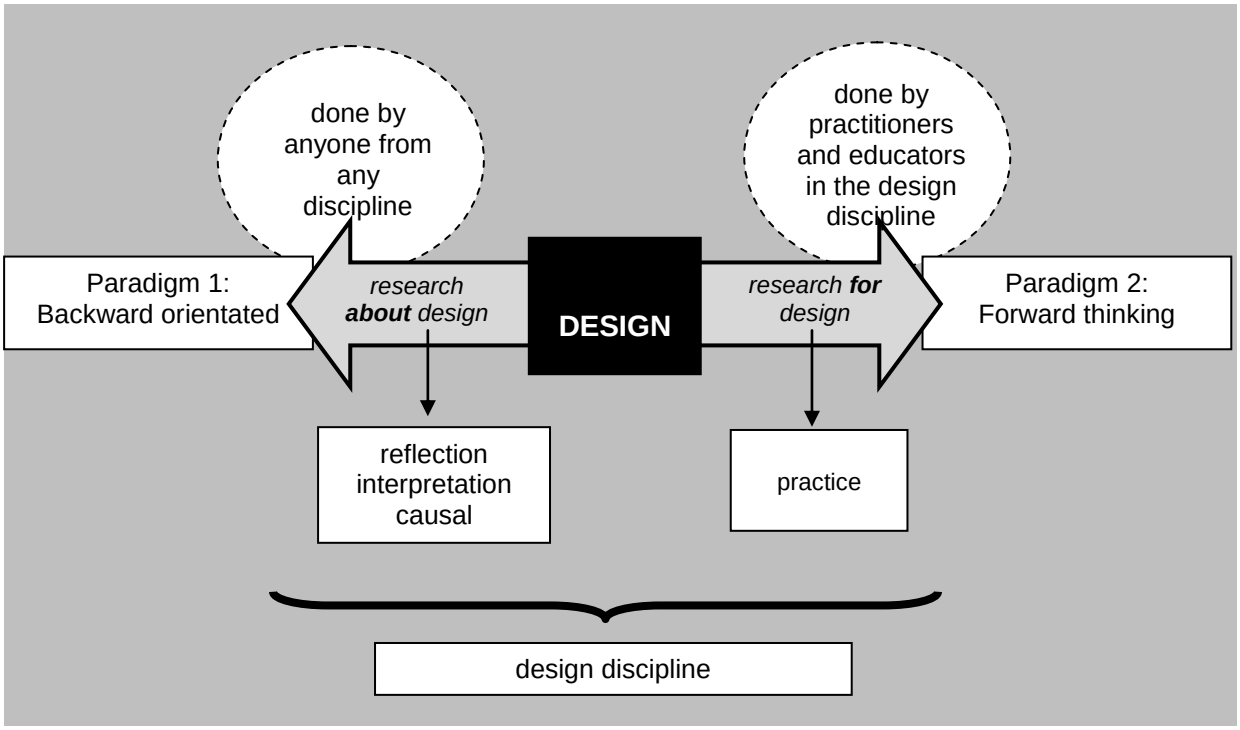


Figure 1: Research in design (based on Jonas and Buchannan, Dooren & Margolin 2010)

Ezio Manzini (2008:5-8) adds to this argument by saying that design research must be seen as a design activity developing [new] knowledge that is useful to those who design in order to use this [new] knowledge in the processes of design. He divides design knowledge into three cognitive artifacts that have different purposes, namely:

- visions: that stimulate and promulgate strategic discussion,
- proposal: that integrate knowledge into projects and
- tools: that assist in understanding and implementing design ideas.

If one adds these three constructs to the above diagram, tools form research that helps the designer understand the nature of what we design (research about design) and therefor are based in history, sociology or philosophy. Research for design includes ethnography, semiotics, ergonomics, technology and economic disciplines, and refers to research that stimulates and integrates knowledge in design visions and proposals. Manzini (2008:6) proposes a third aspect, that of research through design, and explains this to the research that effects change through the discipline of design for example, sustainability. This third aspect highlights the need for autonomous design research, as he mentions "Design is a discipline that combines creativity and subjectivity with a dose of reflection and arguments". The knowledge produced in research through design cannot be "…implicit and integrated, but should be explicit, discussable, transferable and accumulable."

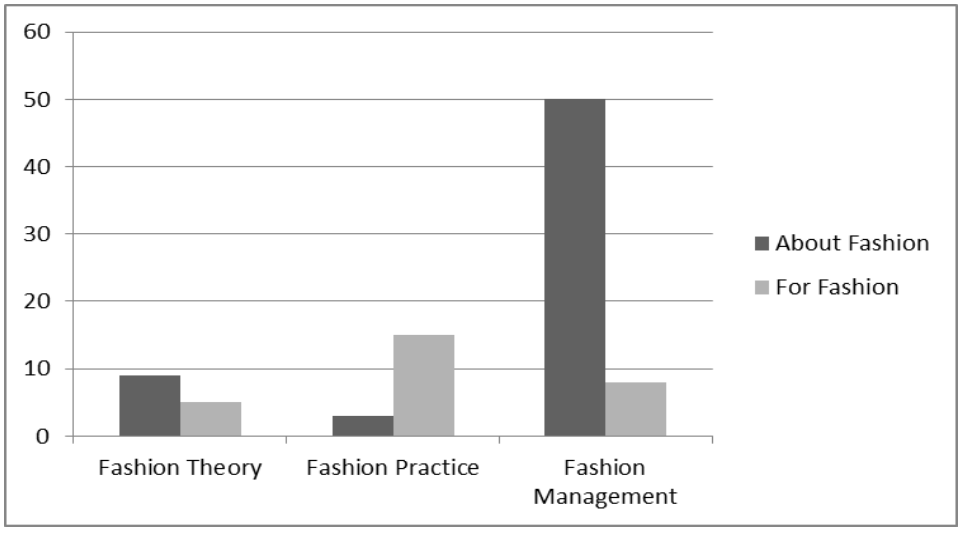
How does this discussion inform research about and for fashion design? Research *about* fashion is debated in society and this is where fashion studies lies. Research about fashion centres on product and the impact of product(s) within the context of society, therefor research *about* fashion would not be possible without a product. On the other end of the spectrum (figure 1), research *for* fashion (fashion design), centres on process, product and form, and (as per Manzini) developing [new] knowledge for

fashion design as a construct, fashion design as a process and for fashion design as product are key to fashion design as a way forward.

A survey of abstracts (published in 2010 and 2011) of three well-known international fashion journals, namely *Journal of Fashion Theory, Journal of Fashion Practice and Journal of Fashion Marketing and Management*, emphasises that current research in fashion predominantly lie within the paradigm of research *about* fashion.

Fashion Theory	**About Fashion**			**For Fashion**	
	Social	History		Process	Product
	8	1		2	3
Fashion Practice	**About Fashion**			**For Fashion**	
	Other			Process	Product
	3			8	7
Fashion Marketing	**About Fashion**			**For Fashion**	
	Purchasing	Consumer behaviour	Marketing and branding	Buss. strategy and retail	Process and product
	14	11	10	15	8
Total	**62**			**28**	

Table 1: Focus of current research



Graph 1: Illustrates an emphasis of research conducted about fashion

For this exercise, only essays, articles and exhibition reviews were considered. The journal *Fashion Theory* presents four issues per year (volume) with an average of five reports or critical essays per issue in addition to book and exhibition reviews. In the sample, no book reviews were considered. The journal *Fashion Practice* publishes approximately the same number of articles per issue in four issues per year. *Fashion Marketing and Management* has been in circulation a lot longer that *Fashion Theory* and *Fashion Practice* (since 1996) and delivers 4 issues per year, averaging 9 articles per issue. Both *Fashion Marketing and Management* and *Fashion Practice* do not include book reviews in the journal.

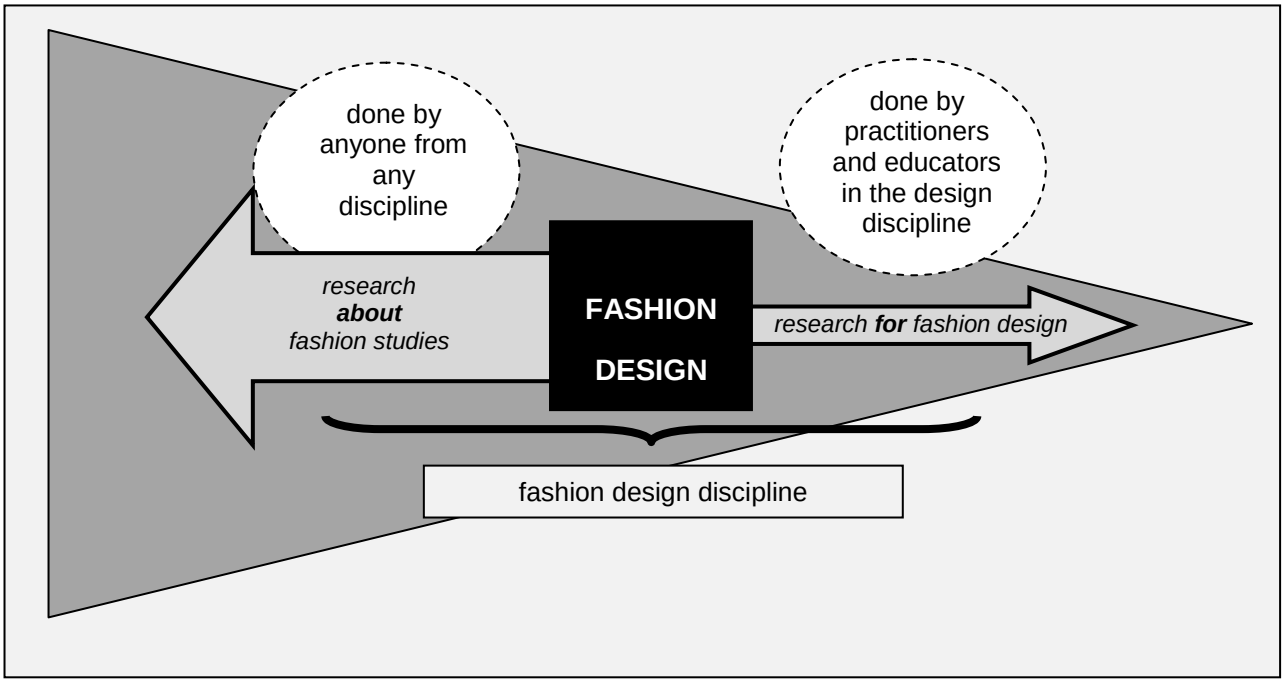


Figure 2: Fashion design research

A reoccurring notion that applies to fashion and design is that both areas of study have been approached from diverse perspectives and have emerged as interdisciplinary areas of study. Fundamental to both areas is that they exist within a system of interrelated activities which must adapt to environmental and cultural change with implications for both practice and education. If one views figure one with regard to research in fashion design, it becomes clear that research *about* fashion [fashion studies] has dominated research *for* fashion [fashion design]. Figure 2 explains the phenomenon in a schematic format.

The education of fashion designers at an undergraduate level has traditionally placed emphasis on 'practical skills' training with a vocationally focused curriculum comprising technique, professional knowledge and job-related skills. Theoretical aspects consist essentially of what can be termed 'trade theory' with focus being placed on the chronology of dress based in a historical paradigm. If fashion design adopts what Buchanan et al (2010) emphasise, how we think about fashion design impacts on how we teach fashion design, how the student studies it, and how it (fashion design) ultimately informs the practice of fashion design, then the following research *for* fashion design could be divided into three categories (modelled on Design Research: a disciplined conversation by Nigel Cross 1999:6), namely:

- People
  This research area has a focus on fashion design knowledge and includes how people design fashion. For example empirical studies of fashion designer behaviour, theoretical deliberation and reflection of the nature of fashion design ability and studies of the development of design ability in individuals. This can lead to how people learn fashion design and how design development may best be nurtured in design education.
- Processes
  This research area focuses on fashion design praxis, and includes tactics and strategies of designing fashion, research methodology for fashion design, the study of processes of fashion design and development and application of techniques which could aid the fashion designer.
- Products
  Product is a research area that focuses on fashion design as a phenomenon, and includes forms, materials and finishes, semantics of the discipline, syntax and form in fashion design, efficiency and economy in fashion design and relationships between form and context.

If fashion design is thought of as being part of the integrated system of fashion, that is equal in value to all other parts such as production, distribution and consumption, research *for* the discipline of fashion design and the development of theoretical underpinning for this discipline is imperative.

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Short Biography

Desiree Smal currently heads the Department of Fashion Design at the University of Johannesburg and has been involved with fashion design education for the past 23 years. Her current research interest is in Fashion Design, and in particular sustainable design and eco-design within the fashion industry on a global and national level. In addition, she is passionate about developing the discourse in the discipline of fashion design in South Africa, as well as how the above manifests in design education.

Carol Lavelle is a lecturer in the Department of Fashion Design at the University of Johannesburg. She is currently registered for an MTech in Fashion within the Faculty of Art Design and Architecture. Her interest lies in the development and promotion of research activities that recognise that fashion design is part of an integrated system that is equal in value to issues of production, distribution, adoption and consumption.

