The Status of Sustainable Design Education in New Zealand

Nicola Bould
PhD Candidate
nicola@design.otago.ac.nz

Supervisors: Dr Michelle Thompson-Fawcett
Dr Kerry Shephard

Prepared for the National Education & Professional Development forum: 12th June 2009
PhD Thesis Research

The following statement was recently posted on a PhD design discussion list: “I was wondering if there is now ANY design course that pays no attention to sustainability? I would have thought that the great majority have been quietly teaching these matters to a lesser or greater extent for many years.”

This comment is one of the reasons I chose my thesis topic: Social and Environmental Sustainability in Design within Higher Education. I was confused as to why sustainable design education was not easy to locate in universities around the world. Is this because “the great majority have been quietly teaching these matters to a lesser or greater extent” and therefore it is integrated into everything design educators teach? Does this then mean no title or label is necessary or is it that it is not being taught? I was also curious to determine what it is that people actually teach when they cover ‘sustainable design’. Furthermore I am intrigued to know whether integrating sustainability into all design education is a more effective way of inspiring students to become facilitators for change regarding social and environmental issues in design than it would be as a separate course.

In 2007 I had the opportunity to visit the northern hemisphere and chose to conduct preliminary research and interview individuals who are currently teaching sustainable design. It was a challenging task as many do so, as the above comment suggests, without labeling it as such. These interviews shaped my preliminary research, which questions what is understood by sustainable design, how it is taught and why. The principal research for my thesis considers what is happening here in New Zealand and includes data gathered from design academics and design students from two national institutes and staff members from two national design businesses. One of each was assessed as being involved with sustainability, whilst the other two ‘appear’ to exclude sustainability. This principal study aims to determine barriers, constraints, enablers and facilitators of sustainable design within design education. My thesis looks to further enhance design education’s attention to the importance of developing students’ appreciation for the need to act as facilitators for change for the better.

I hope to complete my thesis towards the end of this year (2009) when the results will be publicly available. If you have any comments or questions please email me: nicola@design.otago.ac.nz
Contents

thesis research
initial research findings
reflection upon this research
further research
Thesis Research

design and consumption

“implant the desire to own something a little newer, a little better, a little sooner than is necessary”

(Strasser 1999:274 cited in Molotch 2003:5)
social and environmental sustainability

(Tischner 2006:22)
Thesis Research

linear design process

Customer Requirements
Conceptual Design
Embodiment Design
Detail Design
Outcome: Designed Product for market release

(Dewberry 1996:12)
Thesis Research

waterfall design process

(Conklin 2006:4)
Thesis Research

detail design stage

75% of resources used
(Argument, Lettice & Bhamra 1998:64)

80% of the economic cost
(Charter & Tischner 2001:122)

80% of environmental and social impacts
“jagged” line in design process

(Conklin 2006:4)
Thesis Research

wicked problems

- not understanding the problem until you have developed a solution
- having no stopping rule
- solutions being neither right nor wrong
- being unique and novel but ill formulated and confusing information
- having many clients and decision makers with conflicting values
- having no given alternative solutions

(Rittel & Webber 1973; Buchanan 1992; Conklin 2006)
Wicked problems in business

Design contains the skills to identify possible futures, build bridges to customers and crack wicked problems.

In a world replete with challenges that are complex, noisy, and ever-changing, our world is awash with wicked problems that beg for solutions. The tales of these problems are not confined to the pages of textbooks or academic journals; they are the stories of our everyday lives, woven into the fabric of society. These are the problems that challenge our most cherished beliefs and our most basic assumptions about the way things are meant to be. They are the problems that require not just answers, but a new way of thinking.

Edward de Bono's concept of 'wicked problems' describes a situation where there is no right or wrong answer, no single solution, and no definitive methodology to follow. These problems are complex and multifaceted, often involving multiple stakeholders with conflicting interests. They require interdisciplinary approaches, innovative thinking, and creative problem-solving skills.

Design, with its focus on understanding user needs, creating new possibilities, and building bridges to customers, offers a unique perspective on tackling these wicked problems. Design thinkers are trained to think outside the box, to question assumptions, and to imagine new futures. They are equipped with the skills to prototype and test ideas, to iterate and refine solutions, and to communicate effectively across different disciplines.

Incorporating design into the solution process can help organizations address wicked problems more effectively. By involving a diverse range of stakeholders in the design process, organizations can gain a deeper understanding of the problem at hand, identify new opportunities, and create solutions that not only address the immediate issue but also lay the groundwork for future challenges.

References:
[Neumeier 2008]
integrating sustainability into design education

image based on “range of possible starting points for education in design for sustainability”

(Fletcher & Dewberry 2002:40)
Initial Research Findings

predetermined categories

(Dewberry 2005:12)
Initial Research Findings

what the staff say

spider diagrams of institutes A – B – C

copyright: not to be used without the permission of the author
Initial Research Findings

what the staff say

spider diagrams of international institutes

copyright: not to be used without the permission of the author
what the students’ say

**Case Study A**

- **High (25%)**
  - “It’s a closed cycle. It’s where something, what you put into the cycle or the system, there’s no waste product. It goes back into the system or it branches off and it, the beginning for another system or it’s the beginning of a new system, it is continuous, you know” (SA1)

- **Medium (55%)**
  - “I guess to me sustainability is more about the recycling of things and using them” (SA6)

- **Low (20%)**
  - “I will be honest. I’m not completely sure but I’m guessing it’s kind of producing something that can be used in the future generations” (SA11)

**Case Study B**

- **High (34%)**
  - “I think it’s a conscious effort while you’re designing to lower impacts and to just, it’s always in the back of your mind whenever you make a decision along the design process, how could I do this better?” (SB3)

- **Medium (40%)**
  - “… first of all with due regard to the environment so that we’re being responsible in not creating too big a footprint, as minimal as possible” (SB2)

- **Low (26%)**
  - “I don’t really know right now. Actually. Yeah. I know we got like a class like sustainability next semester” (SB1)

**Initial Research Findings**

students’ awareness of sustainability

*copyright: not to be used without the permission of the author*
Initial Research Findings

what the students’ say

students’ motivating factors

copyright: not to be used without the permission of the author
Initial Research Findings

barriers to institutional change

. re-train lecturers
. unreasonable pressure
. lecturers are already specialists
. create divisions between and in departments
. high-risk venture
. loss in creativity and aesthetics
. lack of tangible results
. lack of market demand
Reflection upon this Research

1. social and environmental sustainability - ‘wicked’ in nature
2. applying into education achieved through integrated approach
3. specific sustainable design education
Where to from here

. connecting to international research
  (see references)
. connecting to national work
  (for example: Williams 2008)
References


please contact me

nicola@design.otago.ac.nz