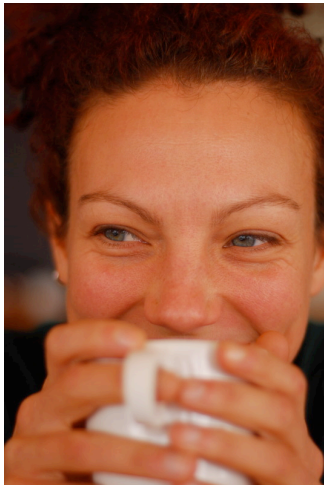


The Status of Sustainable Design Education in New Zealand



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Te Whare Wānanga o Ōtāgo

Supervisors: Dr Michelle Thompson-Fawcett
Dr Kerry Shephard

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

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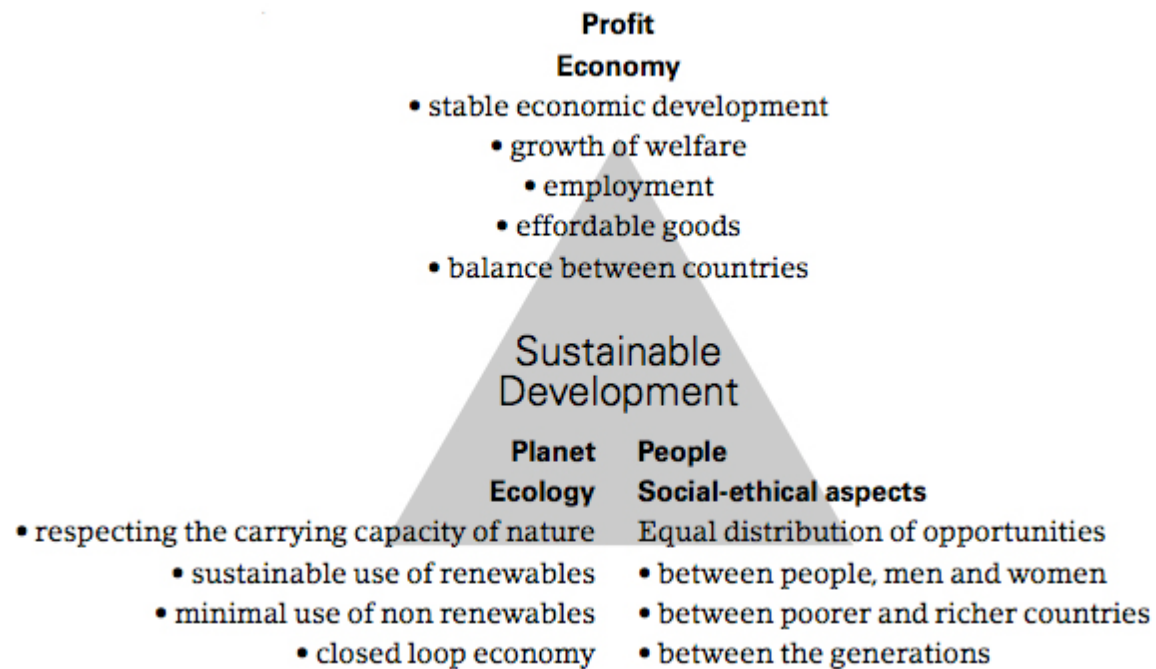
design and consumption

"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)

Thesis Research

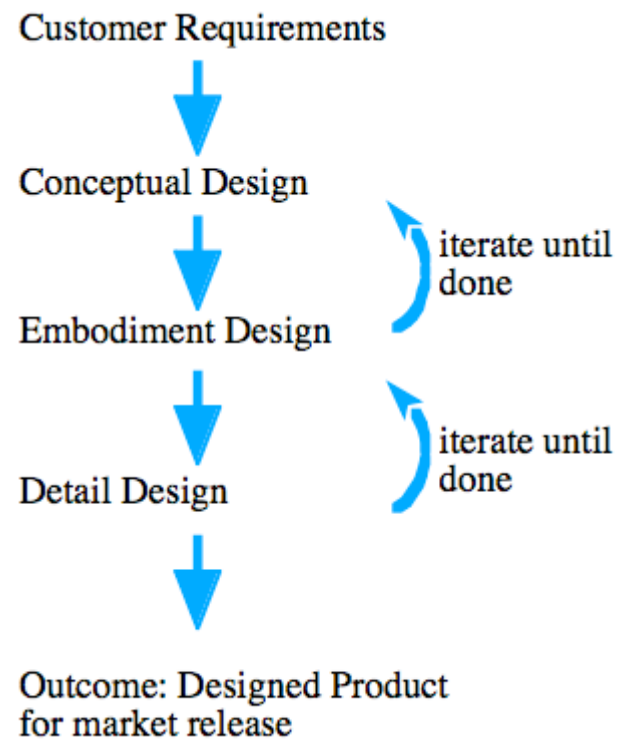
social and environmental sustainability



(Tischner 2006:22)

Thesis Research

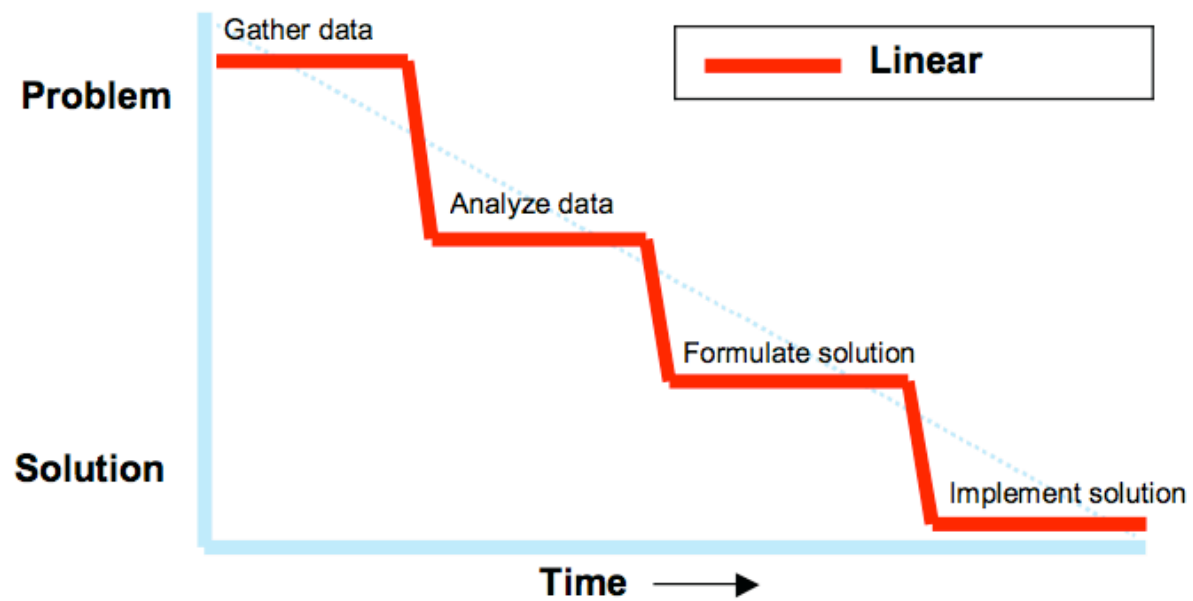
linear design process



(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

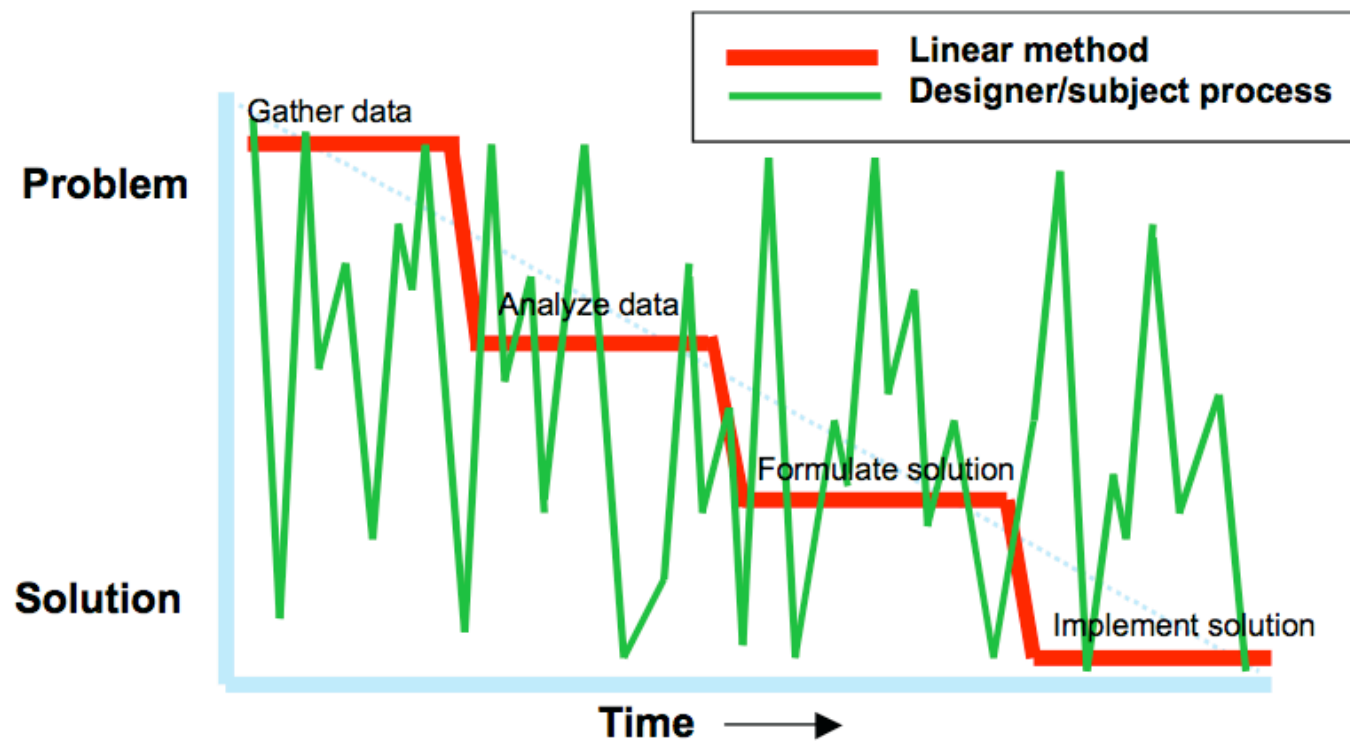
(Charter & Tischner 2001:122)

80% of environmental and social impacts

(White, St. Pierre & Belletire 2005:7; Lewis, Gertsakis, Grant, Morelli & Sweatman 2001:13; Charter & Tischner 2001:122; Tischner 2001:263; Dewberry & Sherwin 2002:127)

Thesis Research

“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)

Thesis Research



wicked problems in business

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

INDUSTRIAL AGE THINKING has delivered some dazzling capabilities, including the power to churn out high-quality products at affordable prices. Yet it has also trapped us in a tangle of what design theorist Horst Rittel labeled 'wicked problems' – problems so persistent, pervasive or slippery that they seem insoluble. Unlike the relatively tame problems found in mathematics, chess, and cost accounting, wicked problems tend to shift disconcertingly with every attempt to solve them. Moreover, the solutions are never right or wrong, just better or worse.

The world's wicked problems crowd us like piranha. You know the list: pollution, overpopulation, dwindling natural resources, global warming, technological warfare, and a lopsided distribution of power that has failed to address third-world hunger. In the world of business, managers face a subset of these problems: breakneck change, omniscient customers, balkanized markets, rapacious shareholders, traitorous employees, regulatory headlocks, and price pressure from desperate global competitors with little to lose and everything to gain.

In a 2008 survey sponsored by my consulting firm and Stanford University, 1,500 top executives were asked to identify the wickedest problems plaguing their companies today. While the top ten included the usual suspects of profits and growth, it also revealed concerns that hadn't shown up on corporate radar screens until now: aligning strategy and customer experience, addressing eco-sustainability, collaborating across silos, and embracing social responsibility. The number one wicked problem cited by corporate leaders was the conflict between long-term goals and short-term demands.

Clearly, these were not the concerns of 20th-century managers. The last management obsession of the 20th century was Six Sigma, the total quality movement inspired by Dr. W. Edwards Deming and his post-war work with the Japanese. Six Sigma has been so successful that quality has virtually become a commodity. Customers now expect every product and service to be reliable, affording no single company a competitive advantage. Unfortunately, the more progressive elements of Deming's

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(Neumeier 2008)

Thesis Research

integrating sustainability into design education

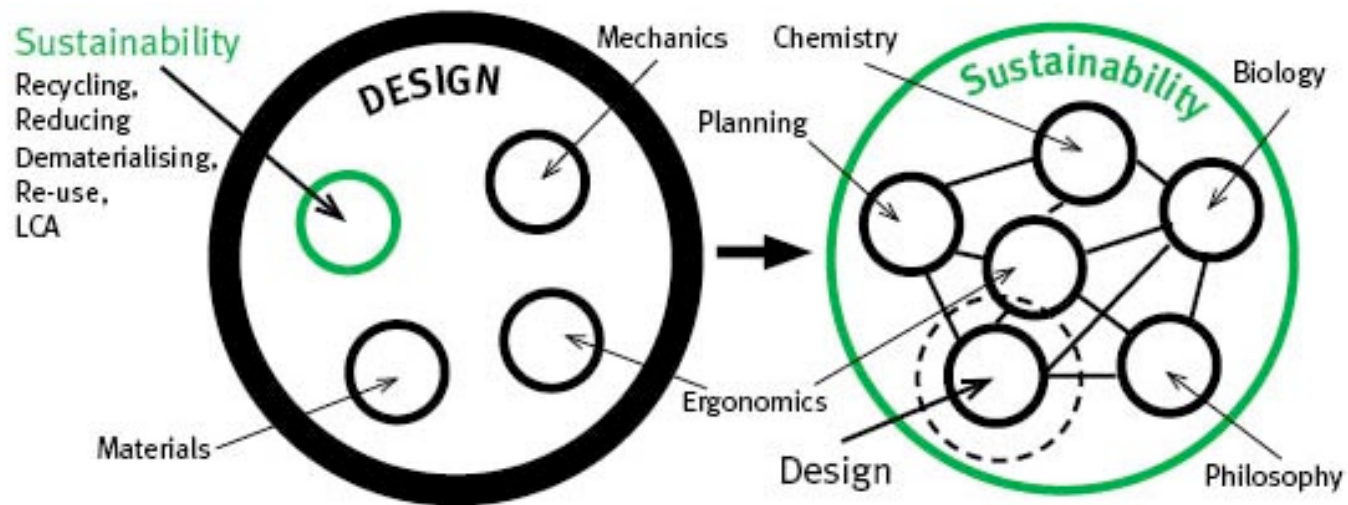
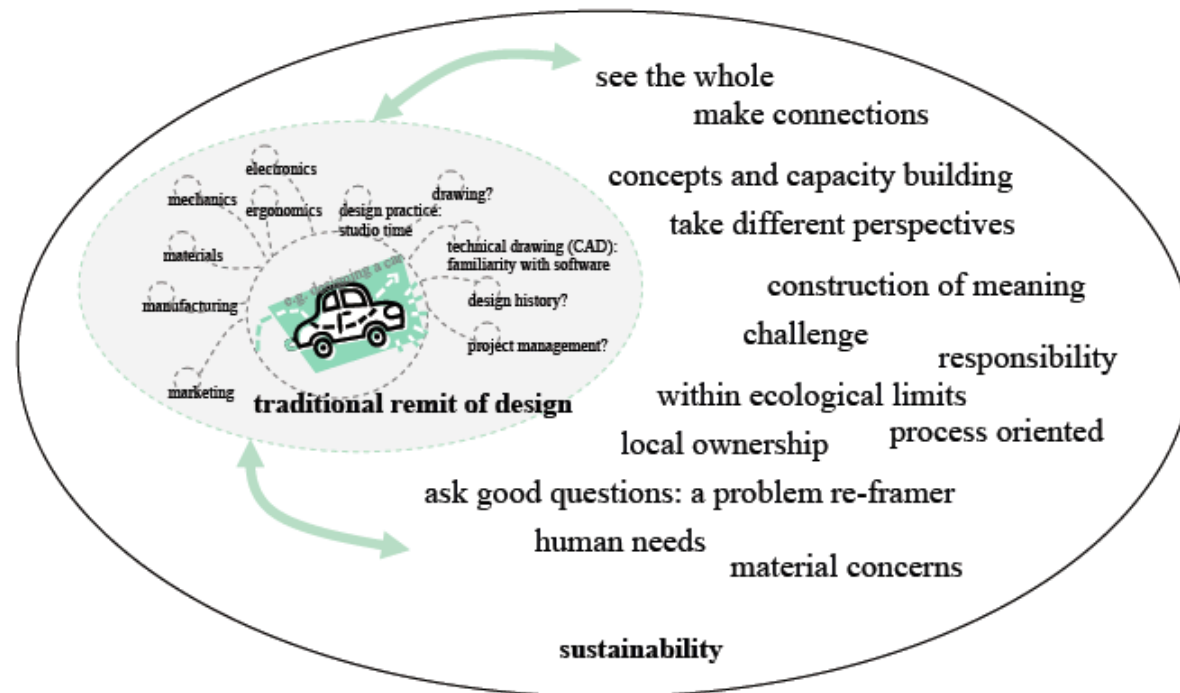


image based on "range of possible starting points for education in design for sustainability"

(Fletcher & Dewberry 2002:40)

Initial Research Findings

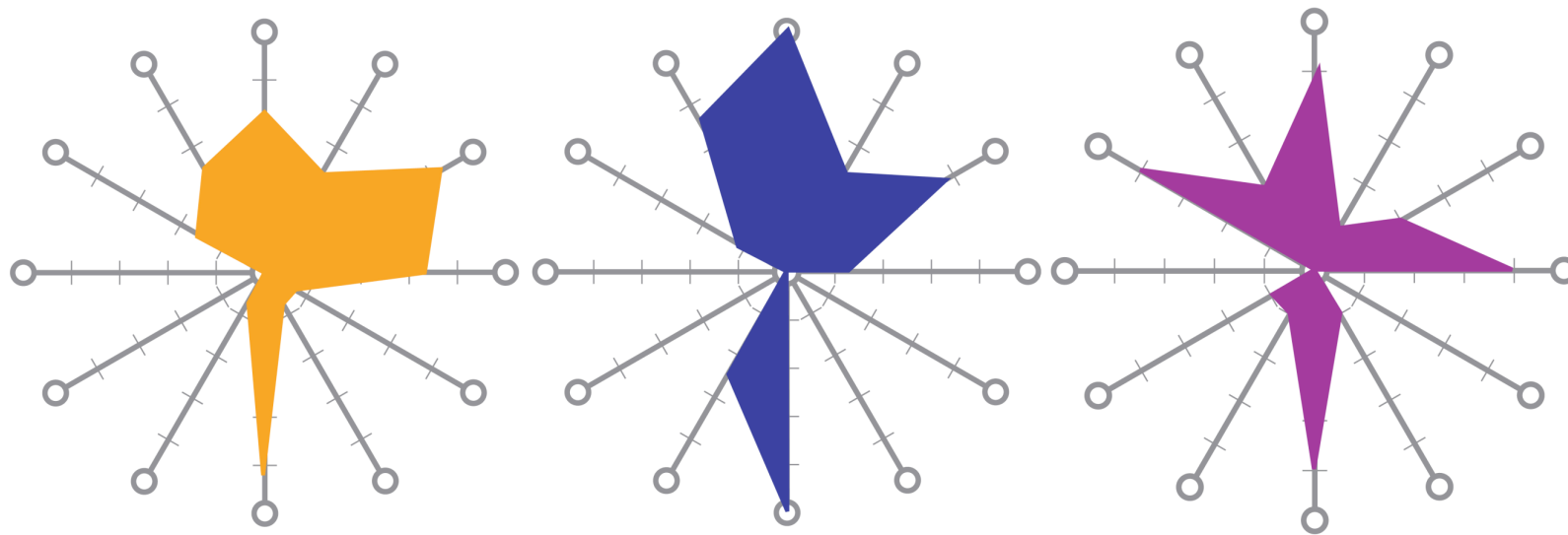
predetermined categories



(Dewberry 2005:12)

Initial Research Findings

what the staff say

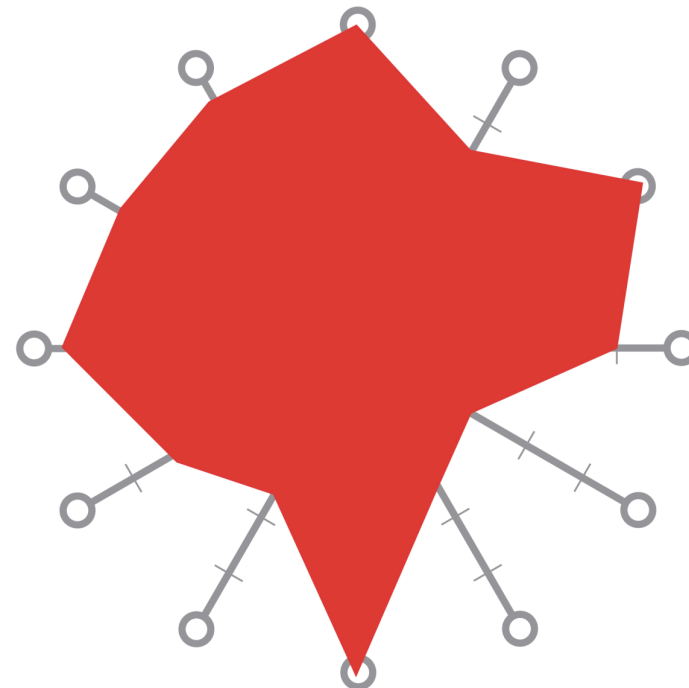
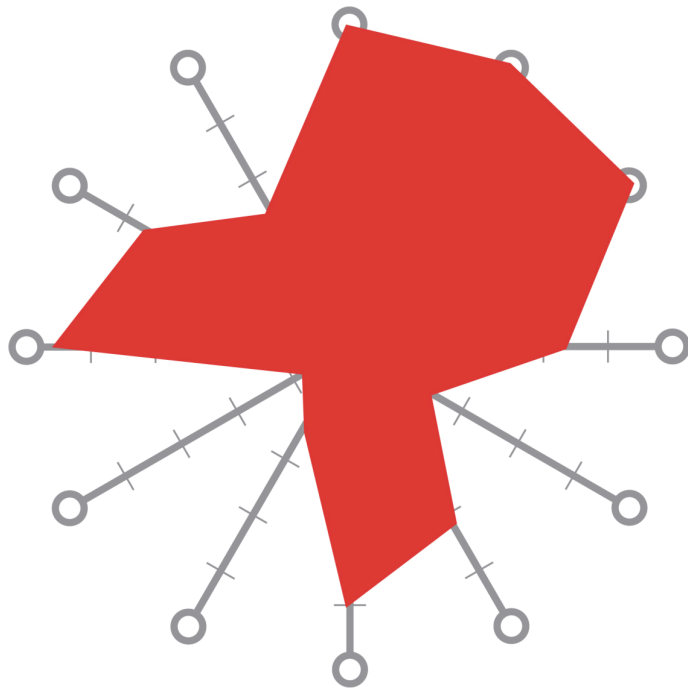


spider diagrams of institutes A – B – C

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Initial Research Findings

what the staff say

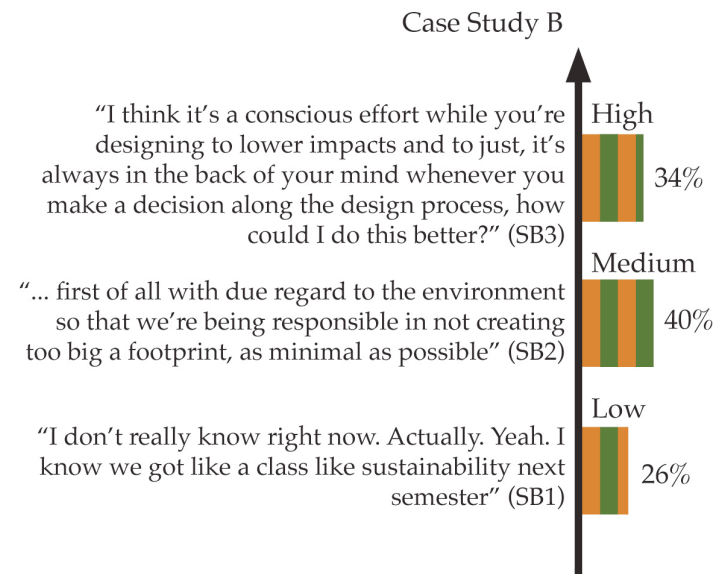
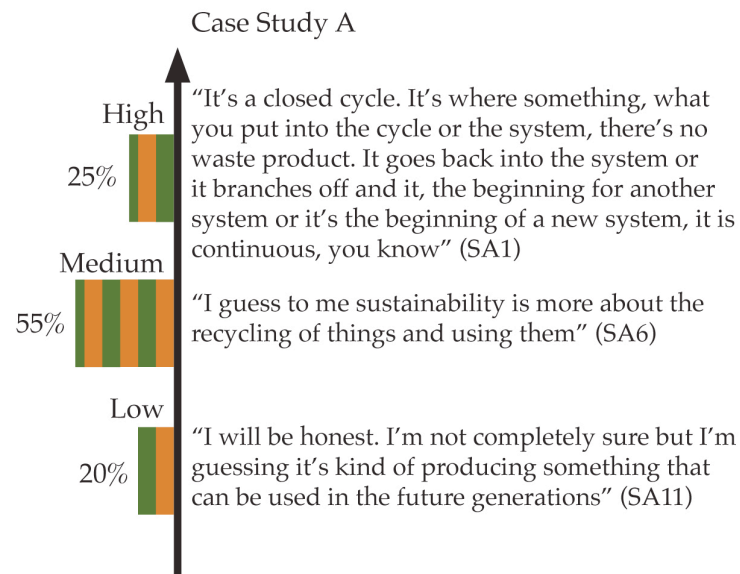


spider diagrams of international institutes

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Initial Research Findings

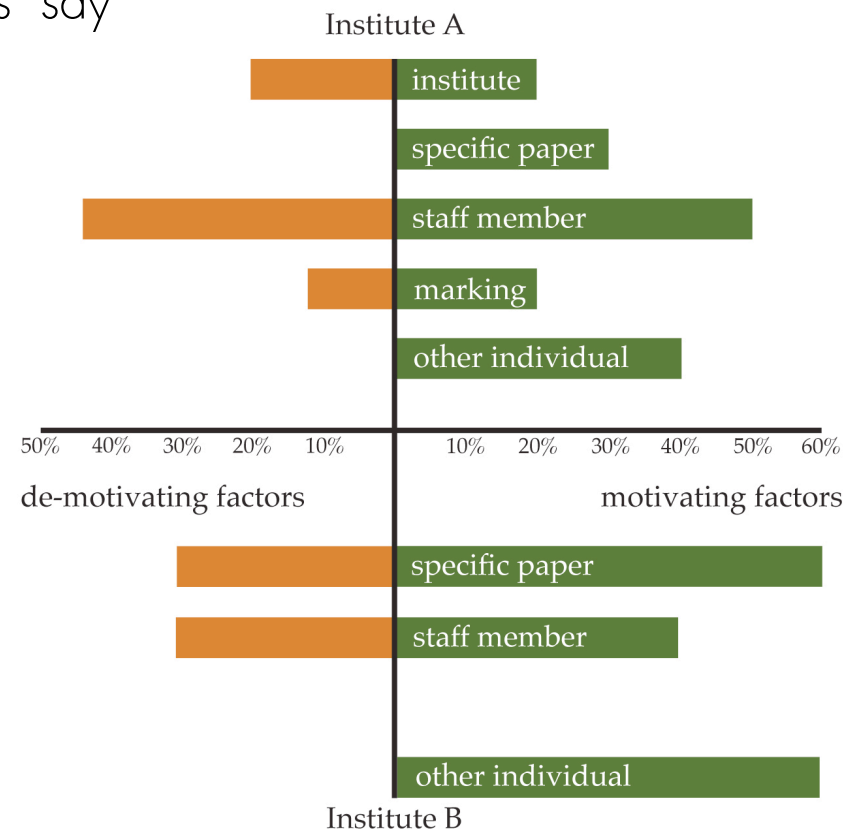
what the students' say



students' awareness of sustainability
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Initial Research Findings

what the students' say



students' motivating factors

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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

- . social and environmental sustainability - 'wicked' in nature
- . applying into education achieved through integrated approach
- . specific sustainable design education

Where to from here

- . connecting to international research

(see references)

- . connecting to national work

(for example: Williams 2008)

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