

Culturally Responsive Pedagogy

some ideas from across the ditch

A/Prof. Kurt Seemann
Faculty of Design



i respect where i stand

Tena Koutou Tena Koutou Tena Koutou

Katoa

Culturally Responsive means...

- Teaching to understand **cultures based innovation** as we **link up** like never before
- Working Technologically is **a form of social practice that transforms human knowledge**
- Design **Context and Purpose is EVERYTHING**
- **Metaphors and narratives** can inform design education strategies
- Working Technologically **has its own unique way of making knowledge and meaning**

Culturally Responsive means...

- Teaching to understand **cultures based innovation as we link up like never before**
- Cultures Based Innovation - a global basic in a connected world

Look to the light,
Look to the dark, whose there,
whats there?



Global cultures are colliding -
innovation and cultural insight are new assets



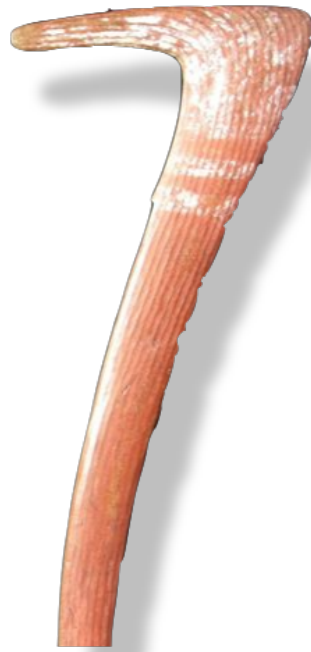
Cultures are sharing, teaming up, and competing across boundaries like never before



Culturally Responsive means...

- **Working Technologically is a form of social practice that transforms human knowledge**
- Pedagogy of hunting weapons is taught through song and dance





Culturally Responsive means...

- **Design Context and Purpose is EVERYTHING**
- Teach to build body of knowledge for different '**bubbles**' of context



The case of
“interior design”

Teach to explore
**purpose and
context**



Basic ideas

- Treat bubbles of context seriously
 - *its not just a boundary, its a basis for a **way of knowing**; for framing scale, scope, validity, & **tracking errors** of judgement*
 - *drives innovation to actually 'work' within defined contexts*
- Case of a complex bubble in the vast interior
 - *the fuzzy edged context driving **private-community waste disposal** - design challenges in some small and remote desert communities*

Learning the bubbles of context

- Design purpose only makes sense when placed in its intended context of use
- Defend and contest a design's '**best fit**' for various sized *bubbles of context*

bubbles of context

why this metaphor?



Swinburne



bubbles of context

define what is
left out

scope &
constraint

validate
'best fit'

tracking
errors



Swinburne



bubbles of context

define what
links-up
inside

new ideas

hybridity

external
pressures
& systems



Swinburne



bubbles of context

define holism

design
defence

a body of
knowledge

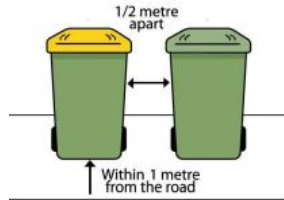


Swinburne



Waste Disposal Design

equity means access to same systems



Swinburne

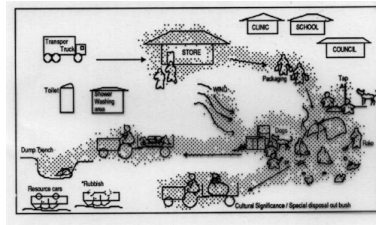
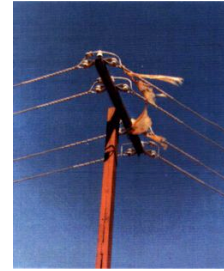
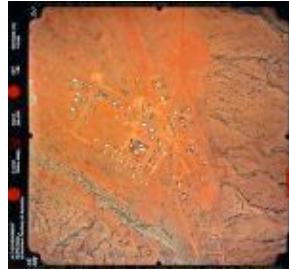
Waste Disposal Design

equity means access to same systems



Swinburne

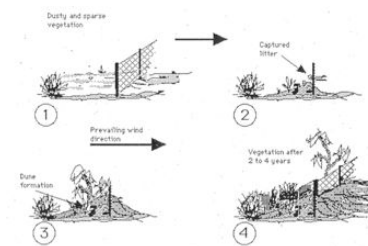
a dominant hybrid public-private bubble with fuzzy boundaries..
THUS the approach taken to design research was critical



RESEARCH REPORT

120-200 people per year.
Very Dry, Very Hot, most the time...
Very cold, very windy the rest.
No market economy,
no income for technical service jobs

Scale and Scope per year
70,000 Softdrink Cans (lots of sugar,
lots of value)
30,000 1.25 Lit Bottles
34,000 Plastic Bags
400 14kg Flour Drums
137 Retread Rubber Tyres
400 Tyre Inner Tubes
50 Plastic Leaf Rake?
30 Vehicles (120 Rubbish Cars)



Swinburne

So what's the interior bit?

If you don't take the need to understand
your fuzzy **bubbles of context** seriously,

- you end up with rubbish..and won't know why things worked and why things failed
- Remote community waste disposal often has to work in a complex **hybrid 'bubble of context'**

Swinburne

To recap

- Treat bubbles of context seriously
 - *its not just a boundary, its a basis for a **way of knowing**; for framing scale, scope, validity and errors of judgement*
- Case of a complex bubble in the vast interior
 - *the fuzzy edged context driving **private-community waste disposal** - design challenges in some small and remote desert communities*

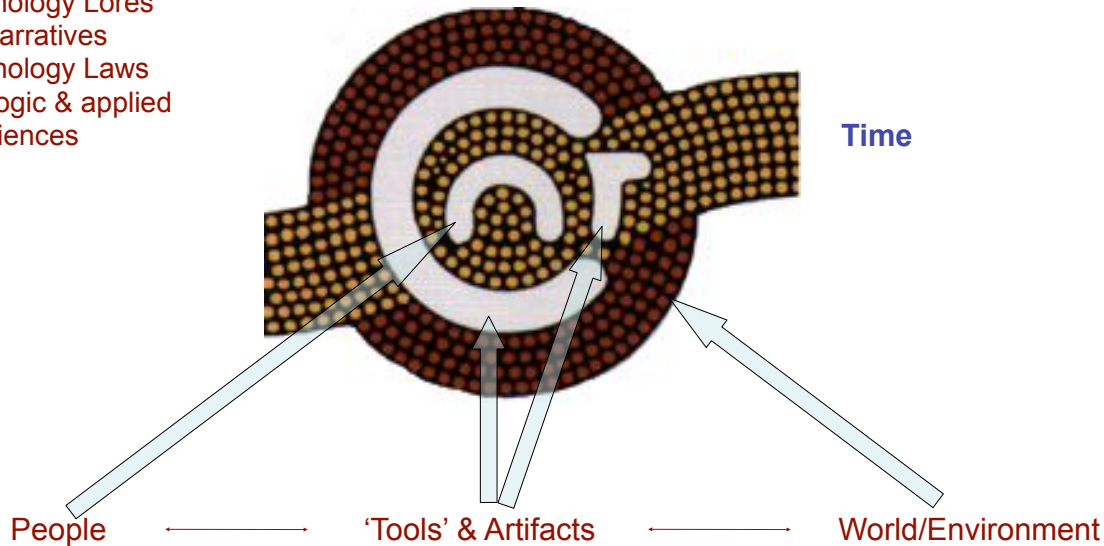
Culturally Responsive means...

- **Metaphors and narratives can inform design education strategies**
- Teach the lores and laws of technology

An Aboriginal Way of seeing their technical knowledge

Levels of Abstraction:

- Technology Lores
 - Narratives
- Technology Laws
 - Logic & applied sciences





We educators and learners hereby declare that :

“We will foster and advocate technacy and innovation capability across curriculum and in teaching practice, in the interest of our common sustainable future.”

“We also acknowledge inspiration from desert people's ingenuity and the relationship between people, technologies and our environments that as a whole system offers both ideas as well as challenges for assuring intergenerational fairness.”

29

Defining Elements of a Technology Genre



Materials

we transform that ultimately come from our ecology, both physical & digital



Purpose & Context Criteria

The design contingencies that validate whether our ideas **‘work’** in their intended context of application



Tool Systems

we use to transform “materials”, both physical & digital



Technacy Genre

The conceptual system of materials, tools and agency that are designed to work coherently together towards a purpose and for an intended context of application.



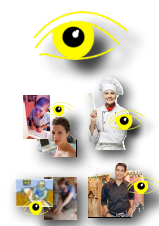
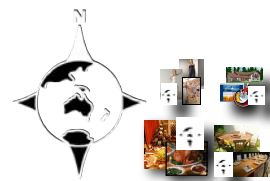
Agency

we embody insight, knowledge, skills and values to creatively express, share & realise our ideas

Technacy Genre/ Technology Type



**Genre:
Pottery**





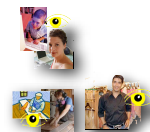
Genre: Wood



(C) Copyright to Kurt W Seemann



Genre:
Food

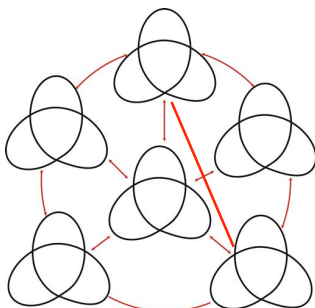




Technacy Genre: Generic

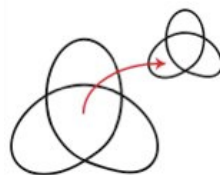


Metaphors for communicating basic technacy system rules



Networked systems
rule (collaboration)

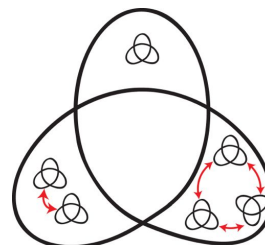
Learn to design & make
things that work together



Substitution Rule
(improvise)

Learn to design &
make components
that are then used in
specific ways to feed
into new solutions/
ideas

Deconstruction:
learn to physically
and conceptually
deconstruct and
reconstruct systems
or devices



Nested systems rule
(supply chain/
dependencies/fractal
systems)

Learn how and why your
solution was reliant on
many previous
processes - right back to
raw ecology, basic
knowledge, or first tools

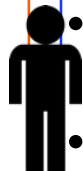
Culturally Responsive means...

- **Working Technologically has its own unique way of making knowledge and meaning**
- encourage socially engaging processes that help students to defend and contest 'best fit' for their designs.

Ways of Knowing

• **Working Scientifically** (iAnalyse: iDiscover)

- focusses on the ethical process of gathering data about the world
- is not directly accountable for what people do with findings (though they may withhold findings)
- seeks to control the context variables
- analyses to understand the parts, (breaks reality up in bits)
- Knowing is by testing one idea against an alternative (method of **idea falsification**)



• **Designing & Working Technologically** (iSynthesise: iDesign)

- focusses on the ethical effect of transforming the world
- is directly accountable for its designs, now & later (though they may decline to design and make the project)
- seeks to accommodate the context variables.
- synthesises to understand the whole (integrates parts to create new realities)
- Knowing is by testing/or simulating if one idea **works** against key purpose & context criteria (method of **best-fit** contestation)

Culturally Responsive means...

- Teaching to understand **cultures based innovation** as we link up like never before
- Working Technologically is **a form of social practice that transforms human knowledge**
- Design **Context and Purpose is EVERYTHING**
- **Metaphors and narratives can inform** design education strategies
- Working Technologically **has its own unique way of making knowledge and meaning**

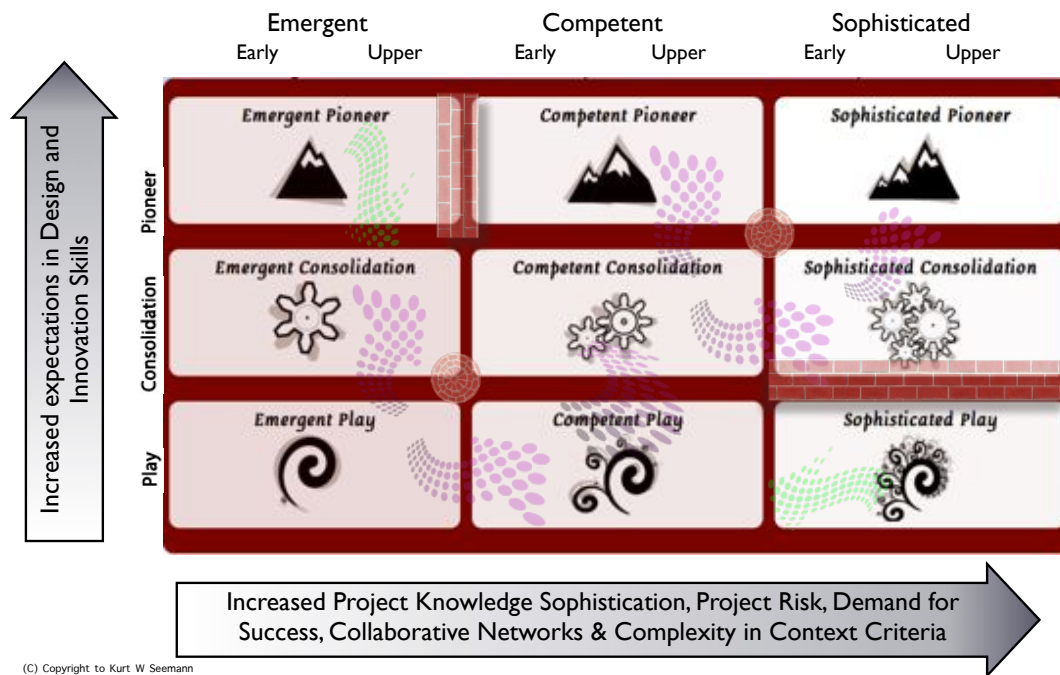
Thank you

Post Script



Developmental Technacy and Design Chart Basics

Set Project Complexity or Diagnose Learning
(Assessment **for** learning)



(C) Copyright to Kurt W Seemann