

# **The Design Dimension of Citizenship**

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## **Themes: Personal Citizenship/Global Education**

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### **Abstract**

Everything in our man-made world has been and continues to be designed and redesigned. The consequence of our actions and furthermore the way in which we continue to engage with sustainability of cultures, societies, economies, environments and imagined futures is a concept that must be explored within the education of designers and consumers.

This paper investigates the role of design education in empowering students to think critically about their man-made world, making decisions about how they live and the impact they can have both locally and globally. Secondary design education has a dual role, as the specialist education of future designers and the general education of knowledgeable consumers, in essence the development of a designerly citizen, as Fry (2007) suggests, “the user of the designed of sustainment requires as much creative and critical attention as the practitioner” (p. 23). The pedagogical contribution of design to the curriculum supports student immersion in authentic, real life problems that advance student agency when reconceptualising solutions. Considering the needs of others, developing designs and making decisions through the lenses of values and citizenship, underpins the ethical designer or design student.

Case study examples will be presented, demonstrating how trainee Design and Technology teachers were directly engaged in design projects that foreground the capacity to respond creatively and appropriately to real life problems. Trainees placed ‘other’ rather than self at the centre and underpinned their designs with deep understanding of the role of values in developing appropriate solutions which have gained recognition throughout their wider community.

### **Introduction**

Historically, design has been associated with the field of production of goods that reflect the wants of an ever more demanding consumer culture (Margolin, 1998). The perceived need to better our quality of life, compete in a global economy and respond to the consequences of a man made-world have seen design become both the problem and the possible solution to an increasingly unsustainable future. As Hodgman (1995) suggests any design becomes part of the physical reality of its time, as designers reflect the values of their society, society therefore gets the design it deserves. As educators of future consumers and designers, we must develop in our students the ability to reflect critically on the decisions they make as citizens.

In this paper design (the noun) will be thought of as structure or form, closely linked to product, intention and function (Cope and Kalantzis, 2000; Norman; 2000, Waks, 2001;

Willis, 1999). Designing (the verb) is understood as agency: suggesting an active, deliberate process to make or change the conditions of our man made world (Cope and Kalantzis, 2000; Flusser, 1995; Margolin, 1998), considering the needs of others, developing designs and making decisions through the lenses of values and ethical citizenship.

### **Consumer, design practice and design education**

Current issues in design practice run deeper than the popular 'green design or ecodesign' labels, so while consumers adopt recycling and hybrid cars and feel better about the environment, it does little to solve the larger issues. As Tonkinwise (2004) suggests "strong and comprehensive awareness of sustainability fails to translate into sustainable behaviour" (p. 2). What then are the contemporary notions of design that inform our future designers, the students that we teach and the curriculum we work within? Current design disciplines are influenced by the politics of economics, an overemphasis on product, and the consumer imperative. This current development paradigm that design operates within supports the consumer product in response to globalisation demands. It is limited in its awareness and response to design that responds to and considers cultural context as a means of developing design approaches. Many current researchers within the field of design are proposing notions that refute the only role of design as that of a finished product. Designs are conceived as never completed, constantly being modified and remade. Margolin (1998) sees the role of design to "disengage itself from consumer culture as the primary shaper of its identity, and find a new terrain where it can begin to rethink its role in the world." (p. 89). He continues to suggest that to change this consumer paradigm, designers must confront the reality of their practice and look to a practice that is socially directed and contributes positively to global futures.

There are several emerging issues from the literature that identify the focus (current and future) of design and design practices and have direct implications for design education's role in developing citizenship. Central to these is the issue of an ethical designer (England, 2000; Fry, 2007; Papanek, 1997; Sterling, 2001; Tonkinwise; 2003, 2004, Walker, 2006; Ward, 1991), one who is considerate of how society's values impact on the design of products and their appropriateness.

Current discourse around ethical design not only looks to the product, but the nature of the design process. Ethicalness, or a way of being, is grounded in issues of values and citizenship in design, that is designers must not only have knowledge of 'what is right' and do 'the right thing', these must be demonstrated through a designers intentions and actions. The concept of 'ethicalness', a way of being, not knowledge about a way of being has long been associated with human knowing, with the designed object being "tangential" , used by humans in their relations with other humans (Tonkinwise 2003, 2004). Ethicality he proposes is the "materialized ethics of the designed product", implying that we judge a design's success by how well it functions, and it may function at the most basic level of satisfying a need, however, if we are to look at the design's performance in relation to all humans in all cultural and social contexts, then we would be more likely to judge the ethicality of the design. As Findeli (2001) proposes, "there can be no responsible design without a responsible designer", that is, education should be directed to the development of an understanding of the reciprocal relationship between

the designer, the designed and the consumer. Findeli continues, suggesting that the purpose of design should not be an ideal goal to be reached, but a set of values that informs decisions made within a design project. Technology and design commentators such as Hicks et al (1982) contend that design decisions are values driven. They present four broad areas that underpin design decision making: technical, economic, aesthetic and moral. Roberts (cited in Coles and Norman 2005) later revisited these to include 'hedonic', reflecting the consumer wants for design for the senses and pleasure. Fry (2006) extends upon these, linking accountability to ethical design, he position ethics with "the actions of discernable harm or good to the material and social fabric of the world-in-being" (p2), and reflecting a shift away from the technical, economic and moral, to emphasize the ethical and aesthetic considerations.

From the literature it has been identified that ethical design has features that underpin the thinking of designers. These may include but are not limited to design which 'does the right thing', informed by a deep understanding of needs of others that takes into account the cultural, social and environmental appropriateness of the designed solution. The ethical designer finds creative solutions to real life needs where the impetus for the design is in improving the quality of life without doing harm to others (England, 2000; Fendeli, 2001; Papenek, 1997; Tonkinwise, 2003; Walker, 2006).

### **Values education and citizenship**

The Adelaide Declaration on National Goals for Schooling in the Twenty-First Century, (Ministerial Council on Education, Employment, Training and Youth Affairs, 1999) expressed that students should have the,

"capacity to exercise judgment and responsibility in matters of morality, ethics and social justice, and the capacity to make sense of their world, to think about how things got to be the way they are, to make rational and informed decisions about their own lives, and to accept responsibility for their own actions" (Goal 1.3).

Supporting this goal, the principle of values education is defined as any,

"explicit and/or implicit school-based activity to promote student understanding and knowledge of values, and to inculcate the skills and dispositions of students so they can enact particular values as individuals and as members of the wider community." (p. 2)

Mellor (2004) defines citizenship as:

" the development of the skills, attitudes, beliefs and values that will predispose students to participate, to become and remain engaged and involved in that society /culture/ democracy." (p.6)

Design and design education contribute to the way in which we continue to engage with sustainability of cultures, societies, economies, environments and imagined futures by contributing through the analysis and reflection on the impact of the designed product and the way in which it both reflects and shapes the students world. A paradigm shift from the

manufactured to the valuing of others can be affected through design education underpinned by values and citizenship pedagogy.

### **Secondary design education's dual role in citizenship**

Secondary design education has a dual role within the Stage 6, post-compulsory Design and Technology curriculum (1999). It expands the specialist education of future designers and the general education of knowledgeable consumers, in essence design plays a key role in the development of a designerly citizen disposition. Design in NSW is aligned with Technology within the Technology and Applied Sciences Key Learning Area. Whilst Design is a focus ideology of this KLA, within this paper, technology is an assumed tool and outcome of the designed and won't be specifically discussed.

Design education places the student within a context where they must reach out from their personal values towards the bigger picture of society. Within the Stage 6 Design and Technology Syllabus (1999) design outcomes look towards the designers' role in society and the way in which design impacts on the environment. Within the rationale, the study of Design and Technology is seen as developing "student's appreciation of the historical and cultural influences on design and the interrelationships of design, technology, society and the environment" (p. 6). Intended outcomes of designing in Stage 6 include:

"H2.2 evaluates the impact of design and innovation on society and the environment" specifically students learn to "critically analyse ethical issues in relation to innovation and discuss ethical and environmental considerations for designers and society in general (p. 19).

"H.4.3 evaluates the processes undertaken and the impacts of the major design project" more specifically, students learn about "the impact of the major design project on the individual, on society, on the environment (local and global), in relation to potential social or environmental costs or benefits". (p. 20).

In the milieu of citizenship education, the UK Qualifications and Curriculum Authority (2002) views Design and Technology as requiring students to "think about issues such as the needs and values of users and any moral, economic, social, cultural and environmental considerations creating explicit opportunities for links with citizenship" (p.12). Through engaging students in work that makes them consider consequences of their decisions and actions, ethical outcomes can be achieved. (Goggin & Lawler 2002) Students could then take these skills into their role as consumer and make decisions that are informed through sustainable and ethical practices. Design education presents students with a mode of inquiry supporting their exploration of products, systems and environments and the potential to impact positively on the lives of others. Ken Baynes (2005) cited in the National Society for Education in Art and Design (NSEAD) 2006 report 'Design Education: Now you see it , now you don't', identifies the specific nature of design education as "Engaging children in designing and designerly behaviour, learning how to do it and then doing it is a transformative experience for children. That is an experience they don't get anywhere else" (p. 43). Whilst it is appropriate to suggest that designing is a way of knowing that exists within the design discipline, Baynes falls short of discussing how students develop a critical awareness of the consequences of

'doing it'. Chapin (2006) sees the role of the design educator as one that enables their students to develop "Vision", creating in students the ability to see clearly through the critical analysis and evaluation of the current condition and then to act as agents for change. Critical and reflective skills are developed through a variety of ways, including challenging students to view through lenses other than their own and by acknowledging the impact of culture, politics and history. By engaging students in learning experiences that explicitly ask them to consider what they create and the impact it has on others including their natural world, we are creating better citizens. The shift from product driven to sociologically responsive design education is a reflection, according to Bird (1999) of the realized needs of the 21<sup>st</sup> Century. The need of students to be proactive rather than reactive is recognised and through this transformational experience, students world view is developed (Davies and Reid, 2000).

The notions that inform design education and citizenship are not exclusive to that curriculum. All humans are consumers all be it in different contexts, but we all use things that have been designed. The crucial imperatives for schooling in this contemporary culture are to educate students who can account for the impact of advertising and media on the consumer society and to develop in students an understanding of their role in propagating or resisting the ideals of a consumer driven ethos. Dobers & Strannegard (2005) discuss the concept of design in contemporary culture as becoming a key element of consumption. This is in part due to the popularity of the consumers need to 'style' and develop their individual design ideal and companies abilities to develop and market new products and services in response to these needs. What we need is not the same as what we want, as Fry (2001) illustrates through his observation that our children view design as both entertainment and entertaining.

The value of design thinking in general education is in the way it develops reflective, creative problem solvers (Norman, 2000). Norman supports "design thinking" within the curriculum as a critical disposition students need to "hone the desirable characteristics of humanity". The environmental problems we face can not to be solved by designers alone, ((Papenek 1972) but that consumers, through critical consumerism can inhibit the growth of products and consumables, therefore more time needs to be spent "teaching non designers design knowledge" Buchanen (cited in Niederheman 2000). This ideal is echoed by Fry (2007) who suggests that those who use and interact with Design require "...as much creative and critical attention as the practitioner" (p. 23).

### **Engagement with designerly dispositions through authentic tasks**

When student choices and actions are informed by a deep understanding of issues of contemporary design practice then the aspirations of citizenship may be realized through their designed solutions and the way they interact with their world. Design activities are seen as supporting authentic outcomes, developing a "dialogue between ideas and world" (Mishra & Girod, 2006 p. 50) when they are focused on important ideas and engaging students to develop their personal world view.

Reeves, Herrington & Oliver (2003) identify characteristics of authentic tasks such as the one presented in the case study. These characteristics include tasks that,

- match as nearly as possible the real-world tasks of professionals in practice
- enable learners to make choices and reflect on their learning
- encourage interdisciplinary perspectives and enable diverse roles and expertise
- are ill defined.
- are seamlessly integrated with assessment (p. 564)

Students engaged in authentic learning are exploring the cyclical nature of learning from experience through reflection and conceptualization to action and on to continued experience. Schon cited in Waks (2001) suggests that design can only be learned through the practical experience of designing in such a holistic way. That to fully analyse and understand the consequences of a design, students must possess the ability to use the language of design by developing meaning through the operational moves in the context of and experience of designing. Design education needs to remove itself from being identified as a “problem solving” activity, and move towards a curriculum that develops reflective thinkers questioning, as Fry (2001) suggests ‘why design?’ not ‘what to design’.

## **Design projects evidencing an ethical designerly disposition**

### **Inquiry question**

The study seeks to identify whether tertiary trainee teachers studying Design and Technology curriculum are able to demonstrate a designerly disposition that engages with ethical design practices

### **Context**

The following provides an account of 3 trainee teachers’ design projects that resulted from a one semester course at the University of Newcastle within the Bachelor of Education (Design and Technology) program. The 3 students discussed here came from previous career fields such as hospitality and construction. They had completed 1 year of study in Design and Technology Teacher Training that involved a mix of discipline such as industrial technology, food science and textiles and D & T curriculum studies. The course explicitly gives attention to ethical design issues as they inform actions as citizens who have an impact on society. Students are immersed in lectures that encompass aspects of design including; learners as designers, values in design and designing, technology V’s design, emerging issues, corporate responsibility, sustainability, social responsibility and contemporary design practice. Tutorial and workshop sessions focus on issues such as responsibility, ethics and values that move beyond product design and start to engage students in reflective practice.

Assessment requirements for the course were scaffolded to develop students understanding of the impact, both positive and negative, of designed solutions. For the first task students were to provide a critical analysis of a product that has had a negative impact on the environment, and then provide possible solutions that could have been taken into account throughout the life cycle of the product. In task two, students were required to present their research of an innovative designed solution that responded to the

social needs of a specific group in a way that was informed by ethical design practices. Assessment task three which will be analysed below, was aligned with the NSW HSC Major Design Project (MDP), in terms of folio requirements. Unlike the MDP where students can design a solution that responds to any wants or needs as identified by the student, the trainee teachers had more specific criteria in order to extend them beyond the current HSC. The current task mandated that students should:

- Identify a specific social or cultural group from the list below:
  - homeless,
  - elderly
  - disabled
  - culturally displaced (eg refugees)
  - environmentally displaced (victims :- human or fauna, of environmental disasters)
- Research and identify a specific need of one of these groups that requires a designed solution.
- Designed solution is clearly informed by a deep understanding of notions of contemporary ethical design practice.

### **An analysis of three trainee teacher projects informed by ethical design practices**

Multiple texts were used to provide evidence in response to the inquiry question. Student folio, Major Design Project and presentation were analysed against the ethical design dimensions identified from the literature. This framework informed by the literature and used to analyse student designed solutions comprises of the following dimensions:

- responding to the real life needs of others, underpinned by compassion
- deep understanding of the cultural, social and environmental context of the need
- critical reflection on the appropriateness of the designed solution

Students designed solutions should encompass and or reflect on all of the above dimensions.

Case study participants include Julie who has a background in hospitality. Her designed solution involved the presentation of a ‘community bicycle scheme’ that responded to the inequity in available transport to assist people of either low socio-economic background, immigrants or refugees new to living in Australia that prevented them from accessing the city and surrounding suburbs easily at little or no cost. Tony responded to the needs of culturally and environmentally displaced peoples through the development of prototype for temporary shelter systems that responded not only to the immediate need, but also responded to humanitarian goals of secure, dignified shelter that added to the physical and mental well being of the user. He designed a shelter that was self contained, unfolded like a tent and within the flooring system, water storage, hygienic toilet, food storage option, solar and water collection. Sean looked to a more specific need of a disabled group, those with cerebral palsy, responding to the needs of a friend for an overlay to assist with the use of a traditional keyboard, be it laptop or desktop.

By asking students to look outside their personal needs to respond to the needs of others, necessitated comprehensive research of both the needs and already existing solutions. Student's critical reflections saw wider issues of sustainability also be of consideration when designing solutions. Evidence of student's ethical practices were not only apparent within the final solution, but the associated folio documentation of students design journey.

### **Ethical dimension 1: responded to the real life needs of others underpinned by compassion**

Julie's interest in cycling and her personal values underpinned her initial ideas.

The community bicycle scheme would be an unregulated system because the underlying values of it as a system are to provide free and accessible transport to anyone. It makes use of ideas from other countries in order to evaluate and utilise the most suitable ideas for Newcastle. The philosophy is to supply transport to anyone who requires it in a way that does not impact significantly on the environment and makes use of the city's cycle infrastructure already in place. (Julie)

Tony identified current events both locally and globally as a basis for his design project. His starting point was underpinned by a concern about the quality of temporary housing for displaced peoples.

Quite often basic 'housing is provided in the short term, along with other existential requirements. The problem with this type of housing though is that it is adequate for the peoples short term needs, but not much else. However, these short term solutions tend to become the Long term option, basically because once they have been "supplied", the problem of "shelter" has been regarded as being solved, and the world moves on. Media coverage and current affairs reporting into areas of conflict and refugee settlement has shown a continual montage of barely adequate housing, sub-standard living conditions and immeasurable ongoing human suffering. I thought it was time I took a closer look at what is really going in these settlements. (Tony)

The identification of a very specific need informed Sean's project. A very close friend has cerebral palsy and he looked to improving her needs and developing a designed solution that also considered dignity.

My motivation for this project is to assist people that suffer from cerebral palsy with communicating their ideas and thoughts through ICT. People with cerebral palsy are often judged by people in the same way as a person with a mental disability. The truth of the matter is that people with cerebral palsy are often of normal or high intelligence. The condition makes controlling movement difficult and therefore communicating thoughts and ideas through speech or actions difficult also. Many people with cerebral palsy rely on ICT to communicate and in particular word processing applications via a keyboard." (Sean)

## **Ethical dimension 2: Deep understanding of the cultural, social and environmental context of the need**

In the course of researching and reflecting within the progress of their design projects, students discovered opportunities to impact positively in terms of environment and culture. A designed solution that recognises appropriateness necessitates a comprehensive understanding of the context that it will exist in. Sean was able to consider materials when developing his keyboard cover, considerations of transparency, strength and durability were satisfied through both secondary and primary research. Consideration of recyclability ultimately decided the material composition of his designed solution.

The environmental impact of my final solution is fairly minimal during its lifecycle. The product requires no addition of harmful glues or adhesives during production and can be recycled when no longer functional. The selection of polycarbonate as the main material for construction ensures longevity of the products useful life. (Sean)

Julies' designed solution responded to environmental and social concerns from the outset. The design of a system that utilized, where possible, already existing infrastructure and products, significantly reduced the impact on the environment. The donation of bikes and helmets that would normally be discarded again responded to notions of sustainability.

The impact of the system on the environment is minimal, given that most of the cycle ways around Newcastle are already in place. There is a possibility of further construction of cycle ways, however these would only be built after an environmental impact statement had been approved. (Julie)

In terms of social and cultural appropriateness, Julie proposed that those out of work, or disabled could be trained to work within the scheme.

Indications are that a community bicycle scheme could definitely become a viable transport scheme in Newcastle, particularly benefiting homeless or culturally displaced people, as well disabled people through employment within the scheme. (Julie)

Tony's temporary shelter system design was grounded in comprehensive research and understanding of a multitude of needs appropriate to a variety of contexts. In order to satisfy these needs, Tony's design utilized a complex variety of materials and systems including shipping containers

But how many people could be housed in a container?...and would not they be better utilized to transport multiple housing units? Water, sanitation, privacy, security and dignity are all issues that are directly related to the standard of living that is supposed to be provided to people in refugee or displacement situations worldwide. It will be a matter of considering and evaluating the relationships that exist to form 'products associations' and realign these relationships through 'product integration'. In most situations, military style accommodation is used for housing. These shelters often take the form of tents, converted shipping containers, or prefabricated structures in the style of 'commercial greenhouses' or 'factories'. Several shortcomings exist with the use of tents including environmental suitability, durability in long-term situational use,

flexibility in situational locating and arrangement, structural integrity, and lack of “in built facilities. (Tony)

### **Ethical dimension 3: Critical reflection on the appropriateness of the designed solution**

Sean reflected on the appropriateness of his designed solution and discovered that it had more applications than the one he initially designed for.

I believe my final design will have a positive impact on society. Not only will it assist in improving the lives of my intended group but has the potential to help other members of society as well such as people with autism and early stage Parkinson’s disease. I have also identified it’s suitability for use in helping young children whilst learning to type. (Sean)

Social perceptions were a high priority, with Sean concerned that his designed solution must not highlight the users’ disability, as some keyboard covers were cumbersome, expensive and clearly identified the user as disabled.



Fig 1. Cerebral Palsy ICT Aid

Through exploration of already existing solutions both globally and locally, Julie was able to analyse the appropriateness of her design on many levels including cultural, environmental and site specific needs.

Indications are that a community bicycle scheme could definitely become a viable transport scheme in Newcastle, particularly benefiting homeless or culturally displaced people, as well disabled people through employment within the scheme.

The impact that this community bicycle scheme would have on Newcastle is positive as indicated by the social culture of Newcastle being promoted by council as a clean, green city. (Julie)

Appropriateness of Tony’s designed solution is seen in the complexity of the facilities it provides underpinned by both personal and internationally recognised (UN) goals. His designed solution prototype includes all of the criteria that reflect the UN goals of the human right to adequate shelter, an adequate standard of living, access to safe drinking water and sanitation, the highest attainable standard of physical and mental health, a safe and healthy environment, access to resources, including energy for cooking, heating, and lighting. His solution is currently pending Design Registration in Australia.

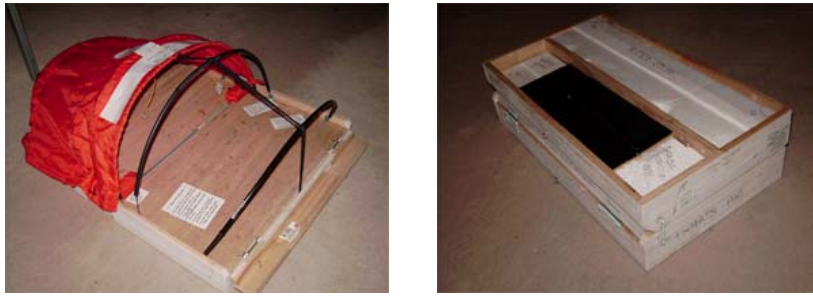


Fig 2. Rapidly Assembled Temporary Shelter Systems - prototype

## Discussion

The pedagogy that underpinned the course has developed over 2 years and whilst refinement is ongoing students are emerging with a strong understanding of the responsibility of design and designers and the role they play in sustaining futures. The current focusing of the assessment task resulted from students work produced in the prior year. Students, who completed the course previously, were given an open ended design brief that clearly reflected that of the HSC MDP, which is to develop a high quality product, system or environment that responds to a need. Analysis of previous year submission of projects concluded that they were grounded in technical skill, eg a window awning, a camping washing machine, a mouse trap and a laptop bag. Whilst these products do respond to a need, there was little evidence of their designs being informed by the lecture series, reflecting Tonkinwise's (2004) observation that understanding doesn't necessarily result in practice.

Current trainee teachers developed a wide variety of designed solutions, all clearly articulating the design thinking that informed their solution, and all evidenced ethical design practices. The immersion over the semester in both theoretical underpinnings of design and design practice, engagement with the needs of other and a focus on a designed solution that was ethical resulted in projects that reflect a commitment to a better citizen.

For the trainee teachers, whose knowledge and understanding of contemporary design practice was limited prior to undertaking the course, the shift in their thinking and disposition was significant. They made connections to the impact of technology and their appropriateness to designed solutions, envisioning the potential for HSC student MDPs' to be a response to real life authentic need that impacted positively on the lives of others, as opposed to being grounded in the technical. Through developing a designerly disposition that is underpinned by values and citizenship, trainee teachers will be able to enable this same disposition in their students be they the designers or consumers of the future.

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