Working with Communities: A case study of design for diabetes

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ABSTRACT

In learning design through projects undergraduate industrial design students often collaborate with staff to work in areas that involve the inclusion of people from outside the university. Such real world problems located among people can be ill defined and the outcomes uncertain. For students engaged in this type of learning, the confrontation of having to perform within the lives and concerns of communities can lead to stress and a retreat into conservative approaches to learning and problem solving. The authors responded to this situation by formulating a methodology and pedagogy of project based learning that facilitates design innovation, privileges marginalized discourses and ensures positive student learning experiences. The methodology has proven successful in its application in the context of people centred design intervention for diabetes and is potentially translatable to other problems within communities that offer rich learning and research experiences.

I. INTRODUCTION

The location of engagement between undergraduate industrial design students and academics occurs in a problem based learning variant known as the 'design studio'. Students encounter design through a diverse set of experiences, and discipline knowledge and practices are learned by actively designing. As in other situated learning frameworks the student operates as a 'designer', recursively emulating an ideal of professional practice and gradually building capabilities. Traditionally projects are conceived to simulate professional constructs such as the design consultancy or manufacturing design departments (Cross 1984). Such projects use fictitious scenarios mixed with real interactions to move towards design outcomes that capture significant and critical components of the framed problem (Cross 1984). Furthermore when the definition of design is situated as a consultancy activity, knowledge is to be rapidly acquired, held and transmitted by the designer. Projects are generally aimed at product innovation within the bounds of a manufacturer's capabilities and commercial interests, and the activity of problem solving and design requires the delivery of material outcomes. The ways in which learning is demonstrated is therefore bound by a producer-biased concept.

In fields of design education and practice that focus on the needs of people and communities, such material centric approaches are inadequate. The authors have found that undergraduate industrial design students often find it confronting to confidently perform in people orientated and non-material contexts of community based design projects. Students' anxieties become evident when they encounter a critique of design that claims; one, that despite the discipline's capacity to produce material solutions to commercial and technological problems, it continues to fail in servicing the needs of those who could really benefit from design intervention (Bonsiepe 1977), (Bicknell and McQuiston 1977), (Papanek 1974); and two, that producer-biased thinking can dominate and constitute an expert discourse, thus limiting the students access to learning from the community. The privileging of expert views skirts the rich narratives of people and notions of what ought to be are often positioned over and above what people actually feel. The high stress that students encounter in community-orientated projects is due to the complexity and shifting nature of socially situated problem solving and their guilt associated with finding opportunities for personal development drawn from the difficulties of others. Other issues of time management and the uncertainty and authenticity of design outcomes often result in students feeling that they have not done enough to satisfy their desires to solve the problems on behalf of the communities engaged. Therefore an appropriate method of negotiating the practical realities of involving undergraduate industrial design students in real world 'community' problems is required.

II. IEID©: METHOD AND APPROACH

Industrial design is fundamentally concerned with how people can improve their daily experiences and has a rich history of community focused interventions. Where designers work alongside other disciplines such as social work and sustainability, the notion of 'community' is positioned as a legitimate site of research and real world problem solving. Projects located outside the producer and manufacturer context and in the community area are aligned to tough and intractable problems (Kahane 2004), and require an exploration of the complexity in people's everyday lives. These projects tackle areas such as obesity, poverty, the peripheral, the young and the infirm that are often marginalized by dominant design discourses (Najman and Lupton 1995). Such projects incorporate stakeholder participation as a way for students to explore real issues, develop and refine ideas, and innovate. The intersection of academics' research interests,

students learning needs and stakeholders interests focuses on 'the problem' as opposed to 'the solution', and situates all participants as collaborators. Design is practiced not as an affiliate of the producer, but as an advocate for a community. When working with communities, a designer's ability to operate at a distance from the dictates of experts and to focus on people is critical (Chambers 1997). The small voices and irritations that mark individual and sub-set identities in a social context constitute the neglected and marginal discourses of communities. As such, these feelings are amplified and people's stories dominate interactions and individuals' needs are taken seriously. The practice of design therefore gets ideologically reconstructed as a service to community.

The methodology underpinning the approach described above is mediated by a set of four stages that orient performances in the project: Immersion, Exploration, Intervention, and Demonstration (ieid). These stages align the project to the university semester calendar and take into consideration possible lack of stakeholders' inculcation into the design process.

Immersion: In the first phase of community-oriented design projects the student is completely immersed in information and listens as a novice to the 'experts' and the 'affected'. The student is frequently asked to 'place' the origin of understandings made, and to recognize that the discourses at play are driven by a set of expert, commercial, personal, empathetic and reactive motivations and rationalizations.

Exploration: Here the student is made aware that there is no panacea and looks for inconsistencies and small clues that would come in use in the exploring potential solutions. A process of 'back-casting' these solutions provides a way of evaluating the impact on the problems discovered (Vergragt 2001) and opening up further possibilities.

Intervention: Problems are approached from a fieldwork perspective where more focused conversations and interviews with stakeholders are held to hone concepts. Once enough data has been generated and examined, the student begins to speculate on intervening products or service systems that can achieve a positive effect in the community. This material is examined, refined, and realised to a level of quality that facilitates a successful intervention in the problems of the community being addressed.

Demonstration: Stakeholder responses from the intervention stage are collated and fed back into the project and additional studies to enable further refinement and realization of the design intervention are undertaken. Typically the method constrains students to communicate their ideas as stories about events to the community involved through posters, prototypes, presentations and other publicly accessible mediums.

Empathetic approaches to problem solving and the elevation of conventionally marginalised discourses as authentic tasks define this approach as a capacity building exercise for students (Chambers 1997). The methodology maintains conventional design practices with the exchange of material deliverables that include the sketched concept, refined illustrations and the model as material narratives that talk to the collaborators (Kuhn 1970). The staging of the project provides a framework for guiding students' learning experiences as well as serving as a time management tool for negotiating often ambiguous and unpredictable the real world contexts in which these projects take place.

III. CASE STUDY: PROJECT DIABETES AS CONTEXT OF APPLICATION

The ways in which people and community have generally been considered in design practice is often contingent on the initial impetus for design and such approaches can be generally described in the following three ways. The first approach redesigns medical products and services to improve performance or fit with the intended user. The focus is on the instrumental prerogatives of the manufacturer, and thus the designer may spend much of the project on manufacturing considerations. The second approach focuses on including people in the discourse, thus universalizing or enlarging the ambit of assumed abilities of people. In this instance products are redesigned to encompass users marginalised by an earlier design solution. The third approach brackets out existing solutions and focuses upon people as a primary location for design innovation and community intervention. It is here that the current methodology is situated.

Project Diabetes as a design studio was first offered to students in 2006. The approach drew on research and practices in community work and sustainability where a sense of caution exists against playing the expert and being prescriptive in interactions with rural communities and the poor. These practices privilege the rights and needs of affected people over those of external agencies who may be looking to exploit the situation for financial or other gains. In migrating these practices into affluent urban contexts the authors brought their ideology and ways of working into contested locales of dependency, health, and the medicalized body (Daniel 1995; Hancock; Hughes et al. 2000; Berg and Akrich, 2004).

A designer working in the diabetes area can find it daunting to function within an increasingly complex clinical care system and with a category of disease that has a factionalised and multidimensional community. As in all participatory projects there is a propensity for participants to build close relationships with stakeholders through negotiation of the problem. Such involvement can limit objectivity; however, it also increases confidence in participants' abilities to believe that problems, no matter how obtuse, can be addressed positively. Community groups are empowered because their issues are being heard. Students gain confidence in having their ideas valued by people external to their locale, regardless of the design solution posited.

Initially in Project Diabetes, the authors retreated from doctors, support organisations, and associated experts, going so far as to paint the medical paradigm as a problem in itself as articulated by the dependency hypothesis which suggests that modern medical practices have made the patient dependent upon experts (Daniel 1995; Berg and Akrich June, 2004). For students to understand the complexity of relevant scenarios, in-depth conversations with the community were required to get a detailed picture of the small pleasures, tensions and minor irritants of everyday life.

The big events – the hypos, blindness, and amputation – were avoided in preference for discussion about the ways in which small and daily challenges were managed. Students encountered the 'immersion' phase of the project through direct and often confronting interactions with diabetics. It was important that the students, as designers, focused on the actual lifestyle and community implications of the disease. A resources website that contained links to projects documenting people's narratives and life stories was developed. Public discourse, blogs, online discussion groups and support group websites were privileged as the primary source of students' research about diabetes. Every week diabetics and people working in the area of diabetic support or research spoke about their experiences. Out of these sources the students identified problem areas on which to focus their design interventions.

Some of the problem areas are discussed below and refer to design solutions developed by students and tested with users by Diabetes Australia (Victoria), a support and peak advocacy agency for diabetics.

A. Social relationships and diabetes

A significant issue for the diabetic community is the role of communication in the emotional welfare and family support for young diabetics. Diabetic children must communicate information about their health to carers, as feelings are a good indicator of blood glucose levels. Children are often reluctant to volunteer information about how they are feeling. The proposed solution was a Planner designed to enable a child to express herself through emotion icon magnets. By listing events and activities in proximity to feelings, the Planner allows for collective negotiation of the week for the whole family and allows parents to track relationships between daily events and their influence on the state of body and mind of their child.

B. Clinical Relationships and diabetes

The relationship between diabetics and the medical professions was also identified as an area for attention in the diabetes community as diabetics find themselves being forced into routines that are quite difficult to balance against already established lifestyle patterns. For instance, diabetics are instructed by their doctors to keep detailed records of their blood glucose readings so that patterns and anomalies can be used for ongoing case management. Often their encounters with their doctors are brief and acrimonious when detailed records cannot be produced. The proposed solution looked at office going *Filofax* users, and involved the design of specific inserts that enable the convenient storage of data about tests, diet and exercise.

C. Relationships with the body

Diabetics are instructed to exercise regularly. This activity requires them to reclaim their bodies and maintain good shape through physical exercise. The proposed intervention in this area was a pedometer married to a pulse-rate monitor with some additional functions that recorded daily patterns and key events. It was proposed that this information would allow for reflection, self-management and aid the dialogue with specialists and carers.

D. Food, routine and identity

Insulin dependant diabetics have to accurately determine their insulin dosage based upon guessing the quantity of carbohydrate in food they eat. Guessing is fraught with problems of inaccuracy and the proposed design was a device that helps determine carbohydrates quantities in food. This device allows for customization using data from websites that contain relevant dietary information of common foods. The frequency and patterns of a user's consumption can be stored and used as a source of information and dialogue with dieticians.

The people-centred methodology of this studio project has been promoted to students as an important alternative to the current commercial and public investment in the development of 'client' service systems for diabetics that are often predicated on the notion of 'outsourcing' the management of an individual's lifestyle. In such systems, diabetes is often positioned as a consequence of 'lifestyle', and as a set of practices that the individual is 'unqualified' to manage. However, the ideological position evident in 'ieid' is not counter to the commoditisation of disease management. Rather the methodology works to elevate the voice of the diabetic over commercial and expert discourses in a bid to tap into very particular solutions to common issues.

IV. Conclusion

Through the experiences of project work done with communities the authors realize that design innovation in the educational context is not necessarily systematic or capable of being bounded within a methodology. A methodology such as 'ieid' does not work in all contexts or with all students as it relies upon reflexivity in learning and an ability to manage often confronting demonstrations of ideas by students to people with a strong stake in the work being done. It requires collaboration with communities who have complex problems that cannot be solved through any singular, material or technological output. It requires working with people who want their issues to be approached by outsiders with unformed prejudices.

The immersion of students in the problems of a community facilitates a greater level of empathy and a realisation that

designers are not always able to provide a functional solution. Students tend to react to the open-endedness of the methodology by either building a strong sense of purpose to the problem at hand or reconstructing their individual identities as marginal, but legitimate, voices within the context of the problem. In both orientations students demonstrate responsibility and care in their work with communities. Students draw on individual experiences, they tell stories, they build working relationships with stakeholders and they begin using whatever agency they have to honestly respond to real world problems. If, through engaging in the methodology, students do not feel that they have a truly responsive 'solution' then the lack of solution is still respected as a valuable contribution to the community and the student's individual development.

The capacity of students to bring their own initiative to their learning must be supported by porous concepts of the discipline and teaching approaches because only then can innovation unconstrained by expertise be imagined. This presents challenges for student and teacher alike, as understandings and expectations of legitimate learning outcomes in the context of industrial design education may need to be reconsidered. Working with communities can facilitate such a change.

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