

Inclusive design

A. OAK (Convener). The design process for inclusive environments and technologies. Gerontechnology 2010;9(2):149; doi:10.4017/gt.2010.09.02.077.00 **Participants:** A. OAK (CANADA), M. STRICKFADEN (CANADA), P. LANGDON (CANADA), and S. WILCOX (USA). **ISSUE** Design is recognized as a 'social' process; that is, when designers create objects and environments they often work with those who will use their products and environments. Such design is referred to as 'user-centred', with Universal, Inclusive, and Assistive Design understood as design practices that explicitly recognize the need to design for users beyond the population of able-bodied persons, to include those who have limited capacities and/or specific disabilities. Speakers will address a range of issues concerning the processes of 'user-centred' design. **CONTENT** The papers explore how general ideas (such as 'technology' or 'disability') meet specific practices associated with the design of objects for populations (including the aged) that may have limited capacities or specific disabilities. Further the papers consider some of the taken-for-granted concepts that underpin inclusive design: for example, the validity and reliability of engaging 'the user' in the design process and the social acceptability and even desirability of creating highly technological environments that may eliminate physical barriers while allowing other, perhaps less tangible barriers to social engagement to remain in place. **STRUCTURE** The papers will report on a series of topics that concern the ideas, practices, and objects of Inclusive or Universal design. Arlene Oak will consider the micro-level of conversation as she explores how the contexts of specific interactions during the practice of universal design may impact upon designers' ideas about the end users of their products. Megan Strickfaden and Patrick Langdon also examine how language is used during design as they map how novice and expert designers' ideas about 'science' and 'technology' relate to the products they design and the users that they intend these products for. Stephen Wilcox's first paper shifts the attention from design practice to the resulting objects, with a discussion of specific products presented at the 'Include 2009' conference, held at the Helen Hamlyn Centre for Inclusive Design at the Royal College of Art, London. Finally, Wilcox's second paper raises broad questions about the validity of Inclusive Design, particularly when it is associated with aging populations. **CONCLUSION** Inclusive/Universal Design is generally taken to be a positive movement as it considers a range of capacities experienced by the users of products and environments. These papers explore some of the complexity of Universal Design through consideration of some of the assumptions and practices that underpin it: papers consider how design occurs 'on the ground' and how design must meet the needs of many users and the specific requirements of individuals. Finally, this session questions what is assumed when developing products and environments for an aging population: what, beyond designed objects, environments, and technologies may best contribute to creating the most satisfactory experiences of aging?

Keywords: Inclusive design, universal design, assistive design, design practice

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A. OAK. *Imagining and representing the user in the practice of universal design. Gerontechnology 2010;9(2):150*; doi:10.4017/gt.2010.09.02.078.00 **Purpose** The purpose of this paper is to explore how designers imagine, represent, and talk about the users for whom their work is intended. Design has been described in various ways, for instance, as a linear process wherein problems are systematically identified and solved, and as a more flexible activity, that involves leaps of inspiration, loops of iteration, and the integration of tacit, explicit, and haptic knowledge. Regardless of how they actually go about their work, designers, who create objects for others usually imagine who those future users will be, and how their object may meet their needs and desires ('objects' includes items such as clothing, products, tools, buildings, and systems). In particular Universal or Inclusive Design is believed to be especially 'user-centred' in that objects are designed both for people who have varying levels of capacity limitations and those who are able-bodied¹. **Method** This paper considers various forms of information that designers interpret when designing for others. Designers may use, for instance, macro-level characterizations of disability such as those established by the World Health Organization or the International Organization for Standardization. Additionally, designers rely on policy-oriented surveys that indicate levels of disability in a population, as well as more micro-level, personalized interviews with individuals who represent their product's target audience. Despite gathering data from a range of sources, designers (and those they work with) ultimately must interpret and translate this information into a real, usable product²⁻⁴. Using forms of data analysis associated with Conversation Analysis, this paper examines transcripts of student designers in meetings with occupational therapy students as they work together, following the precepts of Universal Design, to develop various products (such as a mechanized seating unit that can be used for able-bodied persons and those in a wheelchair). These designers and therapists are engaged in the University of Alberta's cross-disciplinary 'Smart Condo' project, wherein various groups create specific products and interiors for persons who have a range of capacity limitations. **Results & Discussion** In considering extracts of talk we can see how the designers and therapists refer to different forms and levels of information acquired during the research phase of the design process³. Additionally, we can see how participants in a Universal Design process talk about their own emotional, cognitive, and haptic experiences as indicative of those of the potential end user. This research indicates that participants' own experiences and interpretations may have a considerable impact upon how they imagine and represent the end user. In effect, methodical conceptualizations of the end user, so central to Universal Design, are shown to be mediated by the personal, embodied and subjective experiences of (usually able-bodied) individuals. Implications of this are considered for Universal Design and for tertiary-level design education.

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M. STRICKFADEN, P. LANGDON. *Scrutinizing perceptions of science and technology within the environment of product design education. Gerontechnology 2010;9(2):150-151*;

doi:10.4017/gt.2010.09.02.079.00 **Purpose** The purpose of this paper is to examine how novice designers (students) and expert designers (teachers) perceive of, interpret, and understand the concepts 'science' and 'technology' in order to define what science and technology 'means' in an educational context. The goals of this paper are to support both teaching and learning, and to improve the educational environment's ability to create designers who are able to design relevant technological products that support aging populations, persons with

disabilities, and individuals with specialized needs. **Method** Two separate studies are reported here. The first is an ethnographic study that involved participant observation and the recording of extensive field notes and visual data of students designing products in situ¹. The second study involved face-to-face interviews with expert design educators. **Results & Discussion** The data indicates specific ways in which the concepts 'science' and 'technology' are defined and characterized within the specific socio-cultural fields of novice and expert designer². The terms 'science' and 'technology' are analyzed in terms of how often they occur in various data contexts and how they relate to themes that the novice and expert designers use when describing, explaining, and accounting for their design work. The data indicates that when engaging or reflecting upon the design process the understanding of 'science' and 'technology' is (for both novices and experts) varied, but generally it is largely based on intuition, limited experience, and commonsense ideas. Thus, more in-depth, current, and research-based knowledge is generally subsumed by somewhat simplistic, dated, and preconceived perceptions³. The implications of this for both teaching, and engaging in professional practice in the field of Universal Design are considered⁴, given that Universal Design engages with creating, applying and integrating complex technologies.

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S. WILCOX. *New adventures in inclusive design: What happened at Include 2009?* *Gerontechnology* 2010;9(2):151-152; doi:10.4017/gt.2010.09.02.080.00 **Purpose** 'Include 2009' was the 5th semi-annual conference on Inclusive Design held at the Royal College of Art's Helen Hamlyn Center in London¹. The purpose of this paper is to provide an overview of the Inclusive Design movement and to summarize several key ideas presented at the conference. **Method** This paper first outlines the key ideas that underpin the current Inclusive Design movement by describing the relationship between what are actually two separate approaches to Inclusive Design: first, 'Universal Design' and, second, 'Assistive Design'. These forms of design are discussed and illustrated through reference to 23 specific examples of design that are indicative of either 'Universal' or 'Assistive' Design. **Results & Discussion** The difference between the two forms of 'Inclusive' Design is that 'Universal' Design alters general products so that they are more readily used by a wide variety of persons, while 'Assistive' Design provides specific products that have been specially designed to help people to compensate in relation to particular disabilities. Whereas the focus of Universal Design is on altering the environment, the focus of Assistive Design is, in effect, on altering the person by providing tools that the person can use. Some characteristics of good Universal Design include invisibility and increasing the sales volume for products relatively 'painlessly'. An important point about both forms of design is that neither has to necessarily be devoid of aesthetic appeal, for instance, eyeglasses are a model of Assistive Design, a device that has become a fashion item for many people. Recognizing and engaging with the differences between these different forms of design is of particular relevance for design practitioners², but also for users, businesses, government agencies, and other enterprises that are managing design for persons with general or specific limitations. This paper also briefly outlines the significance of the activities pursued at the Helen Hamlyn Center at the Royal College of Art in London. The Centre is a multi-disciplinary team of designers, engineers, architects, anthropologists and communication experts who undertake practical research and projects with industry to advance an approach to design that is people-

centred and socially inclusive. It has a special research focus on design for inclusive design, patient safety, and workplace design.

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S. WILCOX. *Inclusive design and aging: Are we addressing the right problems? Gerontechnology 2010;9(2):152*; doi:10.4017/gt.2010.09.02.081.00 **Purpose** The purpose of this paper is to examine the situation of the elderly in one society in the developing world -the Nweh people of Cameroon, West Africa- with an eye to questioning some of the assumptions of the Inclusive Design movement. **Method** Information was gathered concerning the Nweh people through ethnography and participant observation and then was used to compare the circumstances and wider context of aging between the Nweh people and those in the west, particularly the USA (In 2003 the author received the traditional title, Nkem, in the Nweh Chieftaincy, Ndungallah Lebialem District, Cameroon). The implications of this data were then applied to a consideration of how social context has repercussions for the practice of Universal Design¹. **Results & Discussion** Currently the focus of the Inclusive Design movement vis-a-vis aging is to design artefacts so that they are easier to use for people as they get older²⁻³. If we look at the actual situation of the elderly in the developed world, however, it begs the question of whether eliminating physical barriers (broadly defined) will actually make that much of a difference in terms of the situation of the elderly. In the developed world, toward the end of life, people tend to lose some of their physical and cognitive abilities, become less physically comfortable, become socially and professionally marginalized, become less professionally productive, obtain less respect than they had earlier in life, and meet a general lack of interest in them from the rest of society. Although the design efforts stimulated by the Inclusive Design Movement certainly contribute to increasing comfort and self-reliance in the elderly (at least that is the goal), they do not really improve the rest of the problems. In contrast, in the developing world, specifically amongst the Nweh people, there is very little physical accommodation for the elderly. Elderly people, toward the end of life, tend to be less physically and cognitively feeble, possibly less uncomfortable, at the social and professional center of society, high in productivity, high in respect, and extremely important to other members of society; however, efforts to prolong life are generally not nearly as successful as they are in the developed world. This paper examines the question in the title: are we in the Inclusive Design movement addressing the right problems to create the most satisfactory experiences of aging?

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