Applied Ergonomics 46 (2015) 235–247

Contents lists available at SciVerse ScienceDirect

Applied Ergonomics

journal homepage: www.elsevier.com/locate/apergo

History of Inclusive Design in the UK

P. John Clarkson [a,*], Roger Coleman [b]

[a] Cambridge Engineering Design Centre, University of Cambridge, UK
[b] Helen Hamlyn Centre, Royal College of Art, UK

ARTICLE INFO

Article history:
Available online 6 April 2013

Keywords:
Inclusive Design
Universal Design

ABSTRACT

The UK Design Council describes Inclusive Design as neither a new genre of design, nor a separate specialism, but as a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability. Inclusive Design (also known [in Europe] as Design for All and as Universal Design in the USA) is in essence the inverse of earlier approaches to designing for disabled and elderly people as a sub-set of the population, and an integral part of a more recent international trend towards the integration of older and disabled people in the mainstream of society. This paper describes the development of Inclusive Design in the UK, from its early beginnings, through its subsequent adoption as a topic of academic research, leading to its recent emergence embodied as a framework and toolkit for design.

1. Introduction

"Inclusive Design is neither a new genre of design, nor a separate specialism. It is a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability. Two major trends have driven the growth of Inclusive Design (also known [in Europe] as Design for All and as Universal Design in the USA) – population ageing and the growing movement to integrate disabled people into mainstream society" (Design Council, 2008).

Inclusive Design is in essence the inverse of earlier approaches to designing for disabled and elderly people as a sub-set of the population, and an integral part of a more recent international trend towards the integration of older and disabled people in the mainstream of society. This trend has manifested itself in different ways depending on the local circumstances, culture and social conditions. In the US the primary focus has been on the disabled individual's right to access the built environment and public places, leading directly to the Americans with Disabilities Act 1990 (ADA, 1990), and with a strong lead coming from the civil rights movement. In the UK this focus was extended to include access to services, enshrined in the Disability Discrimination Act 1995 (DDA, 1995), and in Europe to include access to information and related services via the internet and communications technology (ICT) media under the aegis of the European Union (COM, 1999). More recently, the UK Equality Act 2010 (UK, 2010) has updated, simplified and strengthened previous legislation and the new regulations will be implemented progressively over coming years.

These developments have progressively shifted the focus from THEM – the elderly and disabled in academic parlance – to the US. In particular, this shift is from a medical model where people were seen as disabled or incapacitated by their physical and mental limitations or impairments – based on having been born with or acquired disability – to a social model in which people have disability thrust upon them by inadequate design, inconsiderate services and environments and cultural stereotypes. This new approach is based on two premises. First, there is such considerable diversity in mental and physical capability both across the population and over the length of the life-course that the association of 'normality' with 'able-bodiedness' is neither accurate nor acceptable. Second, disability arises from interactions with the surrounding environment that are amenable to design and structural interventions, and not inherently from capability levels, health status, or associated degrees of impairment.

In design terms, this means that we should consider the user population as inhabiting a set of 'bell curves' – with tails of high and low capability levels or size (in the case of anthropometrics) and a central bulge of 'average' capability or size which is likely to change dependent on the chosen population. If products, services and the built environment are considered in terms of the capability demands that they place on the user, then it will be possible to show sectors of the population as enabled and disabled according to the level of capability demanded by the product, service or environment.

* Corresponding author.
E-mail address: pjc10@cam.ac.uk (P. John Clarkson).

0003-6870/$ – see front matter © 2013 Elsevier Ltd and The Ergonomics Society. All rights reserved.
http://dx.doi.org/10.1016/j.apergo.2013.03.002

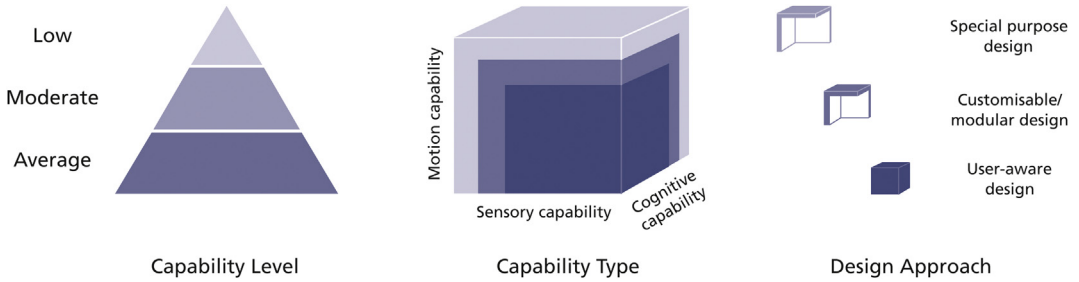

Fig. 1. The Inclusive Design Cube.

From this perspective, not only can such factors be addressed by design, but also the setting of capability demand becomes part of the design decision-making process. In short: we live in a world increasingly shaped by human intervention where design can enable or disable people. It is imperative that we design a world that best matches the diversity present within the population. By recognising that design can play either an enabling or disabling role, it becomes possible to develop strategies that address the challenge of designing for the whole population. An example of one such strategy is the Inclusive Design Cube (Fig. 1), which is an extension of the User Pyramid developed by Maria Benktzon and Sven-Eric Juhlins of Ergonomidesign, Sweden (Benktzon, 1993). The User Pyramid challenges the designer to address user needs from higher echelons of the pyramid rather than the average target user group. The Inclusive Design Cube, an outcome of the EPSRC-funded i~design research programme, extends the pyramid into three capability dimensions to more fully represent the whole population and it proposes three related design approaches, which combined can address the needs of the whole population (Keates and Clarkson, 2003).

The Inclusive Design Cube accentuates the important fact that capability levels are multi-faceted and interact with each other. Their interaction may take a variety of forms. For example, it is likely that young blind people will have very acute hearing to supplement a low level of visual information, whereas older people are likely to have reduced levels of both vision and hearing, perhaps coupled with reduced mobility and cognition.

By using the Inclusive Design Cube model and the user-aware design that it promotes, designers can better understand users' capabilities and create intuitive interfaces, easy-open packaging, well structured, logical and clear signage, power assisted steering and braking, and many other products that are regularly taken for granted. Modular and customisable designs can greatly enhance usability. For example, in the field of ICT the once special purpose technology which predictive text recognition was has now become an essential part of every mobile phone user's life. Overall, everyone benefits from Inclusive Design, and in an era of a rapidly ageing population it is imperative that we design for the whole life course, rather than for a fully able-bodied minority.

The business case for Inclusive Design challenges the myth that it is targeted at a minority of little economic significance, rather it serves older and less able people who effectively constitute a majority with considerable spending power, especially if we include the temporary effects of, for example, injury and pregnancy. Capturing this market through the better design of mainstream products and services can lead to considerable market and brand advantage. In addition, Inclusive Design can act as a spur to innovation by challenging assumptions about accessibility and usability, and by driving the development of intuitive interfaces, accessible ICT and people-friendly environments and services. Inclusively designed products, services and environments will likely benefit the whole population and can lead to an increase of business for companies.

The economic case for Inclusive Design is built on two key factors. First, the Potential Support Ratio (PSR) – the number of people aged 15–64 who could support one person over 65 – is declining rapidly, particularly in the developed world, while care costs as a proportion of GDP are escalating. Second, without an effective consumer offer addressing people's lifestyle, needs and aspirations, older people in particular will have little incentive to spend what disposable income they have, removing what could be a significant economic driver. Inclusive Design, especially in the workplace, offers the possibility for older and disabled people to enter or continue work in gainful employment and, therefore, extend independent living, which in turn can contribute to lowering care costs and help stimulate the economy.

In addition, there is a strong social case for Inclusive Design based on: (1) the desirability of social cohesion and inclusivity and (2) the accessibility of public buildings, spaces and services, which can promote social inclusion. Furthermore, the rapid ageing of many EU member states raises the possibility of generational conflict and envy if measures are not taken to extend independent living and enhance social and economic integration among the older population.

Inclusive Design can make a significant contribution on all these fronts, and its principles and methods can be applied in other related areas, such as design for patient safety where the focus is on improving the quality of public sector services. Moreover, Inclusive Design can greatly improve the attractiveness of public spaces and environments with regard to tourism and major international attractions. For example, there is already a growing emphasis on Inclusive Design in the planning and construction of Olympic standard sporting facilities (ODA, 2008a, 2008b).

The remainder of this paper will describe the development of Inclusive Design in the UK, from its early beginnings, through its subsequent adoption as a topic of academic research, leading to its recent emergence embodied as a framework and toolkit for design.

2. Background

Inclusive Design emerged in the mid 1990s, not as a new approach to design, but rather as a synthesis of initiatives, experiments and insights dating back to the 1960s and beyond. It sought to link design and social need, and to challenge misguided but deep-seated assumptions about ageing, disability and social equality. Many individuals and groups played a part in this, and what follows is by no means a complete account of these developments. The intention is rather to trace how the central ideas and approaches evolved, what has driven them and to reflect on the distinctiveness of the UK experience and future possibilities.