An Online Toolkit for Use in Design for All Education
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Design for All and Inclusive Design are important approaches that help designers to address the challenges and opportunities posed by the ageing population and the social and political demands for equal access by people with disabilities [1]. However, it can be difficult to incorporate them effectively into design courses, in a way that makes a real impact on the students.

In our work, we have found some ways to increase this effectiveness. In particular, we have found that design students respond well to projects where the context and relevance are clearly defined. This is particularly important in inclusive design, where students sometimes struggle to relate to the needs of people who are different from themselves. In addition, design education is greatly enhanced by the use of practical resources, that help students to apply inclusive design principles in design projects.

Together with BT, we have therefore produced an online inclusive design toolkit that builds on these aspects (www.inclusivedesigntoolkit.com). Its first sections clearly define and motivate inclusive design, providing illustrative case studies to indicate that inclusive design not only includes more people, but also generates better overall designs. Later sections provide a description of an inclusive design process, which students can use to structure their projects. This starts with discovering an understanding of the real user and business needs, and works through to the specification of requirements and development of concepts.

As a design student who used the toolkit explained, “we were able to incorporate a wide range of tools and information into design process, particularly as the toolkit helped structure our work and so allowed this to progress more quickly”.

This framework is supported by a variety of practical resources, such as:

- A family of personas. Unlike personas as normally used, these were not created for a particular design project but rather for inclusive design awareness-raising and training. As such, they were designed to cover a wide range of people, with different wants, needs, social contexts and capability levels. We have found this to be effective in personalising the issue of inclusive design and in helping students to consider a wide range of users.

“Using the personas provided on the website were very helpful when thinking about trying to design the largest feasible market as it had personas in all extremes” - Northumbria University design student

Fig 1. Use of a persona by a student to provide design direction for a set of digital radios. A similar diagram was produced for each of the family of personas.
Simulators that demonstrate some of the main effects of common vision and hearing impairments on image and sound files [2]. Students can use these to better understand a variety of impairments, and then upload images from their own designs (or parallel products currently on the market) to see how they might look through other people’s eyes. This provides a more personal insight into capability loss, as well as a practical, simple and quick evaluation tool.

“The simulators that allowed us to adjust the disabilities and experience them for ourselves was the clearest way of understanding them” – Northumbria University student

An “exclusion calculator” [4]. This piece of software enables students to evaluate how many adults in the UK would be excluded from using a particular design, broken down according to the demands it places on seven key user capabilities. For example, a mobile phone may place a high level of demand on vision, hearing, dexterity and thinking capabilities, but little or no demand on locomotion.

The calculator can correctly account for people who have multiple disabilities, because it uses data from the 1996/97 Disability Follow-up Survey [3] which covers all seven capabilities.

Many students were amazed at how many adults were unnecessarily excluded from mainstream products, and were thus motivated to develop more inclusive designs and to target design improvements to achieve the greatest benefit. This tool had particular appeal for engineering design students, who are often more numerically oriented.

“They also used the on-line exclusion calculator (which they loved) to indicate user exclusion.” – A design educator, on a 1st year Engineering Design project at the University of Calgary

References