Editorial

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Welcome to Volume 11, Issue 4 of the *Journal of Enabling Technologies*. In this edition, we publish three papers; each offer small but useful contributions to developing our understanding of how people can benefit from assistive technologies.

The first paper, by Morales *et al*. focusses on how a better understanding of the ways people use assistive devices can prevent accidents and promote independent living.

Sometimes small changes can make large differences. The focus of this paper, on the positioning of grab rails in bathrooms, is not likely to be one that will make the headlines. However, as the authors point out, Canada (where this study took place), in common with most other developed Western nations, has a rapidly ageing population, and falls become an increasing concern as people become older and frailer. Adaptations such as rails can also make a significant difference to the lives of younger adults with spinal injuries and other disabilities. The consequences of falls can also be severe: the authors also draw attention to the cost in human and financial terms of injury, and hospitalisation. It might be added that death, lifelong disability and institutionalisation can also occur as a direct result of falling. Grab rails are one relatively inexpensive way of preventing falls from occurring, and they are also very widely used. Many countries have adopted standardised recommendations for the installation of rails, but as the authors point out by comparing those from the National Building Code of Canada and the Code du batiment du Quebec with Americans with Disabilities Act Guidelines (ADAAG 2010), they differ. The paper also points out that in public spaces, rails are frequently installed in ways that do not reflect human diversity and can be used only by a proportion of the general population. The authors suggest there is only limited research evidence about the optimal set-up of grab bars for older and disabled people, which led them to carry out a pilot study on which this paper is based. Based on a convenience sample of 31 people at risk of falls, participants were invited in laboratory conditions to use different grab bar configurations and to evaluate their preferences in respect of perceived effort, comfort and safety. Their findings suggest that long-term wheelchair users had well-established transfer techniques and were unlikely to change these, but that current recommended design and installation standards were not necessarily sufficiently personalised to specific user requirements, although there was an overall preference for different types of bar for toilet and bath, with participants preferring an L-shaped bar to assist in transfer to toilet, and a horizontal bar to enable better transfer for bathing.

The authors are rightly circumspect about the generalisability of their findings and point out some significant limitations, but also that their findings do suggest a need for further research.

The second and third papers both focus on ways in which technology can support inclusion and participation. The first of these, by Evans and Baines looks at the impact of early powered mobility for disabled children, and designed by the UK charity Designability to satisfy unmet need for a suitable powered device (known as the "Whizzybug") for children from 14 months to five years of age who have difficulty in walking or are unable to walk independently. The need for such a device was identified from earlier studies cited by the authors, which suggest that mobility is extremely important to the psycho-social development of children, and that there is some evidence of stigma arising from the use of traditionally designed powered wheelchairs which the Whizzybug's child-friendly design was intended to overcome.

Whizzybugs were loaned to 90 children and their families and data collected by the service from application and review forms were retrospectively analysed by the researchers to determine if the goals and outcomes (established not as part of a "programme" developed by professionals to

support development but determined in more personalised way by the families of the children) were met through its use. Their findings confirm previous studies of the benefits of powered mobility devices for children, but also that most of the children who were involved in the study were able to achieve a significant number of goals, which appeared to improve their mobility skills, independence, autonomy and level of social inclusion. This, in turn, conferred very real benefits for families as a whole. The study also found that outcomes were better for younger age groups. This was significant for a number of reasons: not least because formal diagnoses for some conditions – for example cerebral palsy-can take longer to establish. The authors conclude that many therapists working with young children who have mobility problems may not be aware of the Whizzybug scheme (though Designability is a national charity) and that early referral is likely to contribute to better outcomes. The authors also offer a good analysis of the limitations of their study. Some of these – relating to the need for assessment and review forms to be more closely aligned with the requirements of a rigorous research study – are worth repeating if we are to properly learn from evaluative research into new and innovative projects.

The third paper in the edition, by Mathai *et al.* also considers the potential for technology to support inclusion and independence through an evaluation of a computer training programme for people with physical disabilities.

The authors offer a fairly exhaustive retrospective quantitative analysis of 130 people with disabilities. In total, 20 participants were living in institutional settings and majority were living independently in community settings. All participants were interested in computer training classes and had signed up for a programme aimed to develop access to and competence with computers and enable them to "live full, engaged lives on the Web". The overarching research question for the study was "what factors affect the efficacy of a goals based computer training programme for people with disabilities". The authors found that participants were able to formulate specific goals for computer use, and successfully participate in training to achieve these. Though this in itself might be unsurprising, the design of the course programme – focussing on individual goals of participants and working with them at their own pace rather than pursuing a formal curriculum or course structure – was appreciated and valued. The authors also found that contextual factors – particularly access to transport to attend classes – affected levels of participation and that computer-based assistive technology is essential for disabled people to facilitate the ability of many disabled people to interact with computers and realise the technological possibilities they present. The authors suggest that despite its limitations, the study offers evidence in an under-researched field but one that deserves more attention if many disabled people are able to overcome what has been described as "the digital divide".