

P. WRIGHT. *The internet's potential for enhancing healthcare (Review)*. *Gerontechnology* 2012;11(2): 264; doi:10.4017/gt.2012.11.02.091.00 **Purpose** Digital communications have brought about major changes in lifestyle since the early microcomputers of the 1980s took these technologies from the workplace into the home. The development of these devices has resulted from the convergence of engineering talents creating new opportunities for interaction and behavioural scientists providing evidence-based principles to guide the style of that interaction. **Method** This paper reviews the science behind the growth of digital gerontechnologies. **Results & Discussion** Initially the principles of interface design were based on cognitive theories and focused on usability. More recently the need for usability has been taken for granted and the research focus has shifted to the quality of the experience – i.e. asking not just 'can you do it?' but also 'did you enjoy doing it?'. The gesture-based interaction of smart phones illustrates the convergence of these approaches. The shift in location from work to home changed the use of digital devices, and many older adults in the 21st century want to access these new opportunities – e.g., emailing and texting grandchildren. The World Wide Web spawned not only gigabytes of easily accessed information but also social networks, chat rooms and blogs. As a consequence, research groups explored computer supported collaboration, drawing on, and extending theories from social psychology. The needs of older adults have not been at the forefront of these developments but many of the underlying scientific principles relating to usability and enjoyment also apply to a senior audience. Handheld devices, ranging from smart phones to tablets, can offer grandparents comfortable ways of maintaining social interaction with family and friends when travel is hampered by mobility and/or sensory constraints. Being able to use your voice to query or command the device, as well as to receive voice information from it, makes these devices even more accessible. In addition to meeting social needs, digital technologies are being developed to meet healthcare needs. Health professionals have only slowly appreciated how digital technologies can benefit both themselves and their patients; gradually a growing body of evidence highlights patient benefits. These include the convenience of making appointments by email, web-based health information including decision aids for patients (Should I have surgery or keep taking the tablets?), video links with healthcare professionals and telemonitoring of patients with chronic conditions. There may be a need to adapt the style of interaction to suit an older generation. For example research suggests that audio information can assist older adults, but it slows down younger adults. Many of the basic principles of felicitous interface design are becoming well-understood, even if they are not always put into practice. When software designers disregard basic interface principles, theory predicts, and data confirms, that older adults will be disadvantaged much more than younger adults. Conversely, research on assistive technologies strongly suggests that designing more accessible interfaces for the older generation is likely to result in benefits for a much wider audience. Consequently we can look forward to the future evolution of a digital ecosystem in which the lives of older adults are enriched and supported by digital gerontechnology.

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