J.L. FOZARD, H-W. WAHL. **Longitudinal studies on aging and cohort effects: Exploring the synergies with gerontechnology.** *Gerontechnology 2012; 11(2):97; d*oi:10.4017/gt.2012.11.02.074.00 **Purpose** Gerontechnology is a science-based interdisciplinary endeavour that seeks to newly develop or to adapt existing technology to the needs and ambitions of aging and aged people. To properly employ technology to meet the needs of aging people it is necessary to understand where scientific information about aging comes from and how it can best be used to identify the needs for technology adapted to aging persons. **Method** A major resource for gerontechnology to learn about aging are longitudinal studies, because this research design is able to address intra-individual change in developing individuals. However, human aging always occurs in man-made environments which change at an ever more rapid pace. Accordingly, the dynamics of interactions between aging individuals and their environments are continuously changing. This dynamic is mostly treated under the headings of cohort or generation effects. This has received strong conceptual and methodological attention in aging research. More concretely, major areas of human functioning such as intelligence, attitudes, and values critical for human development, as well as the use of technology, are not only influenced by human aging (the course of a lifetime), but also by changing micro- and macro-environmental characteristics such as increasing the quantity and quality of early life education, or better health treatment through-out the lifespan. **Results & Discussion** We will unfold our argument in five parts: The first part introduces the potential of gerontechnology and defines five areas of application (health and self-esteem; housing and daily living; mobility and transport; communication and governance; work and leisure) as well as the major goals of gerontechnology. The second part describes a central concept of gerontechnology, i.e. a transactional view of the dynamics of human aging and the person-environment relationships that occur with changes in the built environment and the changes within and between the generations of aging people who create and use this environment. Here we aim to outline the conceptual platform for the distinction between age and cohort effects in the context of gerontechnology. The third part reviews the sources and content of scientific information about age and cohort effects and how these are relevant to gerontechnology. In the light of this more general analysis, the fourth part develops a framework of how to link age, cohort ,and gerontechnology and offers examples of some emerging insights related to major areas of gerontechnology as described in part 1. The fifth part brings some overall conclusions and provides recommendations for obtaining new information for gerontechnology, including the proper role of aging and aged people in the guidance of technology development-consumer participation in the planning phases of development and distribution, as well as the evaluation of technology-based products, services and environments.
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