Abstract

Lifelong learning has become one of the key requirements of living in a modern society. This is especially important with regard to learning to use the great number of complex electronic devices that are now part of our everyday lives. While many of us learn to handle these products by trial and error, especially older users with little experience in using electronic devices need support. To allow the user maximum flexibility in time and location of learning, a training program can be implemented as part of the product itself. Thus, the aim of this research project is to develop guidelines for designing integrated training applications for electronic devices to support older users with little experience in using them.

Principles for a training application were elaborated for teaching older people to use electronic devices based on knowledge about age-related learning. The need for further research was obvious; especially the effect of adjustable training application on learning success of older users. Taking the example of mobile phones, a task-oriented training application was designed, which was simulated on the computer. A training study and a follow-up study support the assumption that the training application is appropriate to teach older people successfully and improve transfer of knowledge from training to everyday use.

Concerning adjustable training application two principles were investigated: the adjustment of complexity and adaptive advice based on training success. Training versions were designed which differ in their ability to adjust their complexity to the user’s experience as well as support the learner through hints about their learning success. In a training study both principles are tested to their effect on older learners’ training success. The results show a positive effect of the adjustment of complexity on users’ experience: older people who trained with an adjustable interface are more successful in learning to use a mobile phone. A follow-up study supports the assumption that the benefit of adjustable training is caused by blocking incorrect actions. Adaptive advice has no significant effects on learners’ success and reduces the self-efficacy of the learner.

This work offers findings how to design training applications as integrated part of electronic devices, which help older people with little experience successfully. The design principles support developer of training applications in early phases of design process. Especially adaptive i.e. stepwise training application which adjusts their complexity to users’ experience is appropriate for training less experienced users.