Efficacy of robot therapy evaluated by DIMENSION

T. Musha*, S. Kimura**, K. Wada***
*Brain Functions Laboratories Inc.; **Kimura Clinic;
***National Institute of Advanced Industrial Science and Technology, Japan;
e-mail: musha@bfl.co.jp

Playing with a pet robot 'Paro' causes activation of brain cortical neurons of demented patients, and this efficacy was quantitatively confirmed by DIMENSION which is based on 21ch EEG analysis. The patients were treated by 20-min robot therapy followed by 2-hour art therapy. Positive efficacy of the art therapy was already confirmed by DIMENSION and MMSE. In the present study improvement of cortical neuronal activity in eight patients was observed after 20-min robot therapy, and the following art therapy did not show further improvement. On the other hand, the art therapy caused improvement in four patients for whom the robot therapy had no effect.

PAPER SESSION 'COMMUNICATION (1)'; CHAIR: ARNE AARÅS (NORWAY)

Using the systems approach to develop computer training course guidelines for older adults

C.B. Mayhorn*, A.J. Stronge**, A.C. McLaughlin**, W.A. Rogers**
*Department of Psychology, North Carolina State University;
**School of Psychology, Georgia Institute of Technology, USA;
e-mail: Chris_Mayhorn@ncsu.edu

Adults over the age of 65 are the fastest growing segment of computer users. Due to this increased demand, effective training programs are essential. Although previous research findings illustrate the importance of older adults' goals, abilities, and experience levels in learning to use computers, these factors are often neglected in the development of computer training courses. We apply a systems approach to help bridge this gap between research and application to address the disparity between what older adults would like to learn and the content of computer training courses. We review the literature on training older adults to use computers and report data from a set of structured interviews to illustrate the criticality of each step in the systems approach. Lastly, we provide the means to evaluate existing computer training programs and suggest modifications for improvement. Our purpose is not to evaluate specific programs, but to educate developers about an approach that has proven successful. Specifically, we provide suggestions for effective computer training for older adults.

The effects of computers and Internet usage on everyday functioning and well-being of older adults: A randomized controlled study

K. Slegers, M.P.J. van Boxtel, J.J. Jolles
Institute of Brain and Behaviour, Department of Psychology, University of Maastricht, The Netherlands; e-mail: k.slegers@psychology.unimaas.nl

To study the impact of learning to use computers and the Internet in later life on everyday functioning and well-being, a randomized controlled intervention study (N=207) was carried out. In this study, older, community dwelling individuals (64-75 years) were trained in computer and Internet usage. After this training, subjects in the intervention group were equipped with a standard Internet computer (Apple iMac) and a broadband Internet connection for a one-year period. The participants in this intervention group were compared with peers in three control groups who agreed to refrain from (further) computer use during the study. At baseline and at two follow-up moments (4 and 12 months after baseline), all participants were screened with respect to different aspects of everyday performance and well-being. Contrary to prior studies and to the hypothesis, for all of the measurements of everyday performance and well-being, analyses showed no significant effect of the intervention. Implications of these findings are discussed.

209

Development of accessible blog for even the elderly with visual disabilities

M. Nakamura, M. Munemori, N. Iwane, Y. Matsubara
Faculty of Information Sciences, Hiroshima City University, Japan;
e-mail: mondo@its.hiroshima-cu.ac.jp

Various computer systems are implemented as Web (World Wide Web) based systems. These Web based systems can be used easily by using Web browsers. However, it is difficult for the elderly with visual disability to use these systems without any consideration for disabilities. The elderly with visual disability use software that reads strings on a computer screen. If there isn't textual but visual information in a Web page, they can't make out the content. In many countries around the world discrimination laws require governments, educational institutes, corporations and businesses to provide equal opportunities for people with disabilities. However, it is said that many Web pages aren't accessible now. The Blog (Web log) is a Web based system where people can write and read information easily. It is being used widely in a few years. If the Blog is a system without any consideration for disabilities, the elderly with visual disability can't access to the information. In this study, we investigated the accessibility of Blog systems and found many problems in the Blog systems. Moreover, we developed an accessible Blog for even the elderly with visual disability based on Movable Type (www.movabletype.org/).

Social, cultural, and personal factors influencing the usage of electronic bulletin board system by Chinese elderly people

K. Chen, H. Umemuro
Department of Industrial Engineering and Management, Tokyo Institute of Technology, Japan; e-mail: chenkang@ml.me.titech.ac.jp

While psychological and human factors studies have been conducted on the issues of elderly people's use of computers and the Internet, the influence of social, cultural, and personal factors on usage had rarely been studied. The purpose of this study was to investigate the relationship between these factors and usage of the computers and network among elderly. Bulletin Board System (BBS) was selected as the target network usage, since its use not only reflects people's participatory behaviour in the cyberspace, but also consists of active interaction among participants, and thus various factors in personality, society and person-community relationship are expected to influence their participation. A survey study with one thousand participants was conducted in Shanghai, China, where the society is also facing ageing problem and the citizens have the basic economic and educational background to own the computer and ability to use the BBS. A questionnaire was designed to probe people's usage of BBS and four categories of factors which were expected to influence their usage: socio-demographic background, computer background and attitude, communication and BBS perception, and personality. A factor analysis identified the underlying factor structure, and they were compared between active users of BBS and non-users.

Meeting the challenge: Teaching older adults how to use computers

W. W.Y. Chung, S.S.Y. Lam
Social Services Department, Tung Wah Eastern Hospital, Hong Kong;
e-mail: Chungwingyinwinnie@vahoo.com.hk

Older adults present a special challenge to libraries offering computer training. Many of those seeking training have little, if any, prior experience with the concepts and skills necessary to use computers, yet their ability to learn those concepts and skills is hampered by the aging process. This article summarizes the factors in aging which most affect learning computer skills, and how those factors can be mitigated.

Geragogy, the bridge between older people and gerontechnology
D.G. Bracco, S. Bracco
Centro Ricerche e Relazioni Cornaglia, Italy; e-mail: ricerchecornaglia@tiscalinet.it

Prejudice. The modern Geriatry and Gerontechnology must not only treat Elderly pathologies and disabilities but rather take care of them making them protagonists and not victims of an old age constructed instead of suffered. For that purpose a continue and constant education and information are essential for all people over 65. This is the aim of Geragogy: the Psycho-Pedagogy of Ageing. **Action**. Much more effective action is needed to ensure that Education Programmes really do reach the Elderly with the reviewed teaching programmes in order that they look tailored for Elderly as well as to stimulate their desire to learn. **Policy**. Increasing such opportunities should mean to rich positive economic effects and to increase individual and social fulfilment. So that the Elderly achieve the full dimension of being an active and thinking person. **Conclusions**. The Elderly today are more active, perceptive, observers and acute interlocutors. They need/demand new methods and new instruments which can make them feel better in their own houses and environment. Institutions (family, schools, nursing homes) professional profiles, demographic and welfare policies, town-planning, engineering etc. must be reorganised taking into consideration Geragogy and Gerontechnology as a bridge between elderly and their well being.

PAPER SESSION 'UNIVERSAL DESIGN'; CHAIR: JAMES HARRISON (UNITED KINGDOM)

Considerations in universal design in terms of physical function characteristics of the aged
K. Kawahara
KIDStudio Corporation, Japan; e-mail: kawahara@kidstudio.co.jp

Japan is the only country in the world with a population consisting of over 19% senior citizens aged 65 and above; currently becoming a Super-Aging Society. Over 40% of its total population aged 50 and above experience deterioration symptoms in their body functions. The influential and the upper level group are therefore center targets for the UD market approach. Some enterprises have already introduced the UD concept, developing immediate life equipment. Researches on usability and accessibility have progressed to some extent and is visible in some products but sometimes appear to be against the user's psychological demand. A number of cases resulted to destructing merchantability, thus the UD concept didn't always appear to be a complete success. It is generally believed that there's a 10-15 years difference between the physical and the intelligence ages. To develop products for people aged 65, there are basic objectives to be considered, but they have not been applied so far. Product development for this particular age group focuses on the sensitive methods and a well-balanced structure beneficial to the mental and physical considerations of the users. This study intends to clarify consideration in universal design in terms of physical functional characteristic of the aged.