Introduction

Research and development in Japan

Technology and Disability has previously focused whole issues on R&D activities in North America and in Europe. Both continents have professional societies dedicated to assistive technology – RESNA and AAATE respectively – and much activity to report. Japan also has many researchers and engineers working to address the needs of people with disabilities through technological interventions, and a professional society called RESJA.

Our colleagues from Japan present their work at professional conferences worldwide, but they are not well represented in the literature outside of Japan. Translating language from Japan to English is one significant barrier to their participation in the global dialogue concerning technology and disability. Finding researchers and soliciting manuscripts is another barrier.

We worked with a team of scholars from Tsukuba College of Technology to overcome these barriers and develop an issue focused on current research and development activities in Japan. This group, Yutaka Shimizu, Tetsuu Kurokawa, Kenji Uchino, Satoshi Ina, Tsutomu Araki, Hisayuki Ishida, and Martin Pauly solicited abstracts from potential authors, reviewed manuscripts prior to submission, and generally made this issue possible. We thank them and acknowledge their contributions. Nearly thirty authors responded to a call for abstracts, and over twenty papers were invited for submission. This issue contains six papers representing on-going work. The papers happen to focus on assistive technology for people with sensory and cognitive impairments.

In "CCTV user survey and prototypes based on the survey results," Okada and Kume explored CCTV use by people with vision impairments. Although the Japanese government subsidizes the acquisition of CCTV's, there is a level of dissatisfaction with the features and functions of existing models. The authors surveyed users and based upon the survey results, they prototyped a new CCTV to meet the consumer's needs and preferences. The authors are from the National Institute of Vocational Rehabilitation in Chiba.

Automated teller machines (ATM's) have become ubiquitous. However, accessing ATM's remains a challenge to people with vision impairments. In "Tactile ATM controls for visually impaired users," Wake, Wake and Takahashi, of Kanagawa University, designed a series of tactile symbols to represent banking activities, for use as supplements to the liquid crystal display text messages. They then tested the symbol's utility among potential users. Lastly, they created a prototype device to test the efficacy of subset of these symbols.

"A system for helping blind children acquire spatial awareness," by Shimizu, Yoneda, Minagawa, Ohnishi and Uchiyama, combines physical tasks and computer games. Users practice and learn spatial awareness by physically manipulating tangible objects, while the computer system assesses their performance and provides feedback. Computer-based games supplement the physical tasks, by providing amusement along with the instructions. The authors work at the Graduate School of Engineering, Nagoya University.

Authors Wada, Shoji and Ifukube, of Hokkaido University in Sapporo, offer "Development and evaluation of a tactile display for a tactile vocoder." They are working to covert speech into tactile stimulation patterns for the fingertip, to supplement lip reading by people who are deaf. The project involves government and foundation funding, and technical support from several companies. The project's goal is a commercial product while the preliminary results include prototype bench testing, and user identification rates.

"Development of a three dimensional laser printer to produce arbitrary tactile patterns," is by Itoh, Oda, Sudoh and Osada of the National Rehabilitation Center for the Disabled in Tokorozawa. They developed a low cost laser-based system that prints raised lines. The device can print Japanese characters, Braille letters, or tactile maps. These output forms are useful for people who are blind or who are deaf-blind.

Kuchinomachi and Kumada, of the National Institute of Bioscience and Human Technology in Tsukuba, are studying how changing levels of cognitive function influence activities. "The relationship between the cognitive function decrease of elderly people and the usability of domestic appliances and participation in outside

activity," presents the results of a survey of seniors on their use of electronic appliances, their participation in activities and their level of cognitive functioning. The results have implications for barrier-free or universal design.

We hope these articles stimulate readers to further explore on-going activities in Japan, and to contact the researchers and clinicians involved in this research and development.

Editors' note

Twelve volumes. Two hundred and seventy-three articles. Three thousand manuscript pages. That is our yield from nine years as the founders and Editors-in-Chief of *Technology and Disability*. It has been a professionally rewarding experience. We benefited by greatly expanding our network of colleagues, and by participating in the development of our field of knowledge. With regrets, we are relinquishing our roles with the delivery of this issue. We are both assuming new responsibilities that preclude us from continuing with this endeavor.

However, we are pleased to announce that *Technology and Disability* will henceforth be edited by Mr. Mathijs Soede, on behalf of the Association for the Advancement of Assistive Technology in Europe (AAATE). AAATE has adopted *Technology and Disability* as their official journal, and they plan to continue soliciting manuscripts and topics from authors around the globe. We wish them well with *Technology and Disability*.

We thank our subscribers, our distinguished editorial board members, our guest editors, our reviewers, and our many authors and co-authors who made this journal possible. We also thank our publishers in chronological order: Andover Medical Publishers, Butterworth-Heinemann, Elsevier Science Ltd, and IOS Press. They ensured that every transition was successful. Lastly, we thank Ms. Susan Boldt who tirelessly led us, and our support staff, in the organization and production of each and every issue of *Technology and Disability* over this past decade.

William C. Mann and Joseph P. Lane