

Summary Table 8: AAATE 2013 Conference Proceedings

Ageing, Disability and Technology

Citation	Topic	Research design	Results	Conclusion
Bo Glimskär, Jenny Hjalmarson Royal Institute of Technology, Stockholm, Sweden (2013)	A Test of a Walker Equipped with a Lifting Device A Test of a Walker Equipped with a Lifting Device	Qualitative, participants, tests with users.	A simple assistive technology such as a walker equipped with an elevating seat would in many of these cases simplify matters and reduce the distress of people who fall often. In addition, such a device can allow people who fall often to live in their homes longer. For caregivers dealing frequently with people who fall, this assistive device can contribute to decreasing occupational injuries.
Christopher Mayer, Andreas Hochgatterer A, Lukas Roedl A, Josemanuelsanchez ,Franciscoforne´Sb Ciskavanhartenc,and Laura Niittyala D (2013) A AIT Austrian Institute of Technology GmbH, Health & Environment Department, Biomedical Systems, Austria b Integrasys S.A., Spain c Unie KBO, The Netherlands d Mattersoft Ltd., Finland	End-User Involvement in E-MOSION Focusing on Mobility Services	Qualitative and quantitative. Mock-up testing to lab and field trials. User involvement by using survey. Face to face meetings with focus group members.	Most of the participants mention shopping as the main reason for frequent mobility followed by visiting friends and cultural activities. Regarding the ways how people get around outside the responses show a broad spectrum. Walking, by car and by public transport services are the most prominent means. All in all the results highlighted the usefulness of the in- tended solution and revealed interesting insights which will be envisaged in the course of the project.	
Anika Steinert, Marten Haesner, Mehmet Gövercin and Elisabeth Steinhagen-Thiessen, <i>Geriatrics Research Group of the Charité - Universitätsmedizin Berlin</i>	Older Adults and the Use of Internet Communication: Results from a German Study-Sample	Quantitative survey. A questionnaire	Almost 50 % of the participants reported using the internet for communication (mainly e-mail). In particular, the socio-demographic factors age, gender and education	Using the internet for communication can be a possible solution to some of the problems many older people have to face, such as loneliness and isolation. Currently, the internet is used by only a small part of older adults. In order to strengthen internet communication in older people, it is

(2013)			influenced the use of internet for communication. Besides socio-demographic factors, we demonstrated that daily telephone use influences the use of the internet for communication. Contrary to our expectations, family situation, mobility and size of living area had no impact in this study-sample.	necessary to know about factors influencing the use of internet for communication.
Charlotte Löfqvist, Maria Haak and Björn Slaug <i>Department of Health Sciences & Centre for Ageing and Supportive Environments, (CASE), Lund University, Box 157, SE-221 00 Lund, Sweden (2013)</i>	The Use of Assistive Technology in Different Age-Groups of Old People	Quantitative and qualitative (interviews), observation and analysing results from interviews)	The results concern testees physical walking abilities with walker, turning circle, walking surfaces, curbs and stairs and doors.	An environment accessible for all should include automatic door openers on every heavy door. Stairs are a hindrance for users of a walker. The regulation for wheelchair use with a turn circle of 130 centimetres in diameter is large enough for all users of a walker.
Angeliki Angeletou, Markus Garschall, Christina Hochleitner and Manfred Tscheligi (2013) Austria	Older Users' Requirements for a Navigation Application	Quantitative and qualitative (brainstorm group sessions,	The results of our study can be summed up in the triplet "I need to know, I cannot, I don't understand", along with users' attitude towards the product domain "when it is necessary"	In particular, we have found that older adults appreciate accessibility and comfort information, cannot always handle the modalities present in a smartphone and can be confused by the way navigation information is presented to them.
Jenny Hjalmarson,, Hanna Svensson and Bo Glimskär (Sweden, 2013)	Accessibility for Elderly using a Four- Wheeled Walker	Qualitative. (Structured interviews and observation)		Stairs are a hindrance for users of a walker. An environment accessible for all should include automatic door openers on every heavy door. The regulation for wheelchair use with a turn circle of 130 centimetres in diameter is large enough for all users of a walker. Handrails and the possibility to leave the walker outside make entrances with stairs possible to master for some users of walkers.
N. Campos-Soriano,, C. Blasco-	Innovative Banking	Qualitative (Concept	--	"we detected the key design requirements for

<p>López , J. Laparra-Hernández , R. Poveda-Puente , R. Barberà-Guillem , A. García ,C. Soriano and M. Sancho (2013)</p>	<p>Interfaces Adapted to Older People Needs and Capabilities</p>	<p>validation,</p>		<p>web and ATM interfaces adapted to the needs and capabilities of this population. The design of age friendly interface is not confronted with aesthetic appealing. Older persons have positively assessed the new approach for the banking interfaces, highlighting the combination of ease-to-use and attractive look and feel.”</p>
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Ambient Assisted Living

Citation	Topic	Research design	Results	Conclusion
Joe Saunders , Nathan BURKE a and Kheng Lee Koay and Kerstin Dautenhahn (UK 2013)	A User Friendly Robot Architecture for Re-ablement and Co-learning in A sensorised Home	Industrial report. (Teaching the robot and co-learning. Experiments)	-	The key part of the architecture is to treat all sources of information, both external, internal and abstract with a common representation. This makes possible complex behavioural generation and scheduling as well as the opportunity to exploit robot teaching.
Greet Baldewijns ,Glen Debard, Marc Mertens Els Devriendt , Koen Milisen, Jos Tournoy, Tom Croonenborghs , Bart Vanrumste. Belgium (2013)	Semi-automated Video-based In-home Fall Risk Assessment	Qualitative (Living lab=camera placed into testees home) tests with participants	The results concerns about walking time across test area	The results show a large diurnal and health-related variance in the time needed to cross the same distance.
Michael Oddy, Sara Da Silva Ramos and Nigel HARRIS United Kingdom (2013)	Using Smart Home Technology in Brain Injury Rehabilitation: The Road towards Service Development	Qualitative (case-studies of two individuals with acquired brain injury living in BIRT Assistive Technology (BAT) House	The findings suggest that this technology has a role in the assessment and support of individuals with acquired brain injury. The project demonstrates both the potential and the difficulties in using smart home technology in a flexible way, with greater reliance on recorded sensor data than is usually the case for standard smart home systems.	Further case studies will better inform the optimal assessment and follow-up procedures that need to be in place, and identify the factors that may influence positive outcomes in terms of independence and life satisfaction of service users.
Reto A. Stucki Urs P. Mosimann, René Müri,Tobias Nef (Switzerland 2013)	Non-Intrusive Recognition of Activities of Daily Living in the Homes of Alzheimer zPatients (to develop a passive, non-intrusive, assistive technology system that estimates the well-	Quantitative	With the measurement of the first five healthy volunteers, the feasibility and reliability of the hardware and software have been proven. Hence, it is possible to recognize activities of individuals by measuring ambient values.	--

	being of AD patients by measuring ambient values in the patient's qhome.)			
Amandine Dubois and Francois Charpillat (France, 2013)	Detecting and preventing Falls with Depth Camera, Tracking the Body Center	Quantitative	the length of steps is clearly related to the degradation of the gait and it is a good indicator to evaluate the fall risk of a person	Good results for detecting and preventing falls have been obtained in laboratory conditions and since the model is independant of surroundings, we believe that it's general enough to work in other conditions.
S. Leonhardt, D. Plorin, T. Teich and E. Müller (Germany, 2013)	Integrative Implementation of Ambient Assisted Living Focused on Efficiency and Flexibility	Qualitative	--	--
B. Van Den Broec, L. Vuegen, H. Van hamme, M. Moonen P. Karsmakers, B. Vanrumste	Footstep Localization based on In-home Microphone-array Signals	Quantitative	--	The work focused on estimation footstep locations using acoustic information.
Carsten Rachuy, Joachim Clemens, Kerstin Schill	Ubiquitous Fall Detection and Activity Recognition System for Bathrooms	Quantitative	(statistical results from data)	It was shown that the position and posture (standing versus lying) of a person can be detected using ultrasonic sensors. Furthermore activities can be recognized and the distinction between normal activities and falls is possible. The combination of both classifier responses, taking into account the temporal sequence of a fall situation, is suitable for detecting falls with high performance.
Francesco Montalto, Valentina Bianchi, Ilaria De Munari and Paolo Ciampolini (Italy, 2013)	A Wearable Assistive Device for AAL Applications	Quantitative	First results stated an accuracy of 99.4% for the heart-rate algorithm and about 87.5% for the respiratory rate. In this work, the evolution of MuSA, multi-sensor wearable device toward low-cost healthcare	In this work, the evolution of MuSA, multi-sensor wearable device toward low-cost healthcare features has been described. The medium-term target is to devise and implement data-fusion strategies (encompassing both kinetic, physiological and environmental data), suitable for

			features has been described.	accurate profiling of user's habits, to detect variations ascribable to impairment or mental conditions, and health-status. Integration into the AAL system CARDEA provides the ground for such an evolution.
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AT for Motor Limitations

Citation	Topic	Research Design	Results	Conclusions
Yuki Yamamoto , Motoki Shino, Takashi Mikata and Takenobu Inoue (Japan 2013)	Development of Input Device of Electric Wheelchair Considering the Characteristic of the Hand Function of Person with Severe Duchenne Muscular Dystrophy	Quantitative		<p>This paper proposed an input device of electric wheelchair considering the characteristics of the hand function of person with severe DMD</p> <p>The authors found the requirements of input device based on the survey of daily living of persons with severe DMD. The authors suggested a quantitative evaluating method of the fingertip force and the range of motion of finger and measured these of person with severe DMD.</p> <p>The authors developed two new input devices considering the fingertip force, range of motion of finger and the shape of hand of two persons with severe DMD.</p>
Tsutomu Hashizume, Hiroshi Kitagawa, Hokyoo Lee, Hisatoshi Ueda, Tadayoshi Miyamoto, Ikuo Yoneda and Shoichiro Fujisawa (Japan 2013)	Evaluation of Physical Load While Propelling Manual Wheelchair on Cross Slope Road and Wave Road	Quantitative		<p>The experimental results in the cross slope road indicated that the physical load of wheelchair user in the 2% cross slope was not statistically-significant difference compared with in a level surface, and were consistent approximately with the previous studies.</p> <p>The reduced oxygen cost index indicated that the barrier-free road construction was effective and useful for improving the accessibility of wheelchair.</p>
Marianne Kylberga, Charlotte Löfqvista, Vibeke Hortsmanna and Susanne Iwarsson (Sweden 2013)	Environmental Barriers and Use of Mobility Devices	Quantitative	The most frequent outdoor environmental barriers nearby home concerned walking surfaces, level differences, manoeuvring spaces, seating and shelters. The walking surfaces were uneven and irregular, and poor illumination of walking surfaces was common. Examples	In conclusion, it is important to consider detailed information on environmental barriers as well as personal functioning to support performance of outdoor activities in everyday life for the ageing population.

			<p>regarding level differences were refuse room/bin possible to reach only by steps or thresholds, high curbs, and the absence of tactile cues for level differences. Furthermore, limited space for manoeuvring, lack of seating places and inadequate shelter from weather were frequent.</p> <p>The largest difference in presence for specific barriers in the nearby outdoor environmental between users and non-users of MDs were for example complicated or illogical routes to/from the entrance, steep gradients and letterboxes possible to reach only via steps or other differences in level.</p>	
<p>Panagiotis Moschonas , Athanasios Tsakiris and Dimitrios Tzovaras (Greece 2013)</p>	<p>Automatic Kinodynamic Wheelchair Modelling for Architectural Design Accessibility Assessment</p>	<p>Quantitative</p>		<p>After several tests in simple and complex designs, it was observed that the proposed wheelchair accessibility testing methodology can be a very useful tool for the architecture designing community. The inclusion of dynamics to the wheelchair model produced a holistic assessment approach and have resulted into reporting accessibility problems that could not be found using current market tools. However, the current tool is still in research status and several improvements are possible, such as adding support for motorized wheelchairs and performing planning on multi-floor designs.</p>
<p>Juan Carlos Garcia, Marta Marron, Jesús Ureña and David Gualda (Spain 2013)</p>	<p>Intelligent Wheelchairs: Filling the Gap between Labs and People</p>	<p>Qualitative</p>		<p>Throughout this paper we have seen that the works on Smart Wheelchairs have reached a high level of maturity after more than 30 years of research. Despite that, the industry has not shown enough interest in this field, so those advancements in</p>

				research labs cannot reach to potential final users: those with strong mobility restrictions. Apart from other considerations, like Safety issues and regulations, the first step is to reach the market. It is needed a standardization effort together (industry and labs) in order to have Smart-able wheelchairs available. A layered and modular IW based on standard modules and interfaces, will help a lot in filling this gap between Labs and Users because the reduction of costs in every production phase (development, construction and maintenance). The advantages for research labs will be also related with the reduction of efforts while tuning a current powered wheelchair to the needs of any specific task.
Paula W Rushton, William C Miller and CanWheel Research Team (Canada 2013)	Understanding and Improving Power Mobility Use among Older Adults: An Overview of the Canwheel Program of Research	Qualitative	Preliminary results demonstrate that new power wheelchair users demonstrate a trend towards improved wheelchair skills, decreased anxiety and increased depression. In general, experienced power wheelchair users demonstrate stability[13]. Preliminary findings from the caregiver perspective suggest that the psychological burden of caring for a power wheelchair user is greater than the physical burden. Psychometric properties of the outcome measures in the toolkit are also showing promising results.	The overall purpose of this research project is to describe the variation in power mobility over time.
Martin Morandell a, 1, Andreas Rumsch , Martin Biallas, Stefan Kindberg , Richard Züsli Robert Lurf a and Thomas Fuxreiter	iWalkActive: An Active Walker for Active People (The aim of iWalkActive is to offer people a highly innovative, attractive and open walker platform that greatly	Qualitative	<u>There is consensus in</u> <ul style="list-style-type: none"> • Easily transportable and storable • Variety of models to choose from • End-users are and will be 	

<p>(Austria, Sweden and Switzerland 2013)</p>	<p>improves the user's mobility in an enjoyable and motivating way)</p>		<p>mainly woman (impact on acceptance, functions, tests, training)</p> <ul style="list-style-type: none"> • Potential for other end user groups, e.g. rehabilitation • Using well-known mobile devices that can be removed from the rollator • tracking for safety is requested. <u>No consensus</u> • Hypothesis of this project: The active walker is primarily useable for people, who are already able to walk and fit enough. • Stigmatizing effect of rollators: 57% have a positive or neutral feeling towards the use of walkers (bias due to high number of rollator users) • There is a trend towards a second or third rollator for different application areas (indoor, hiking, etc.); iv) Additional features may be perceived as additional cost for something, that is not needed. 	
<p>Carin Fredriksson, Liselotte N Hermansson, Lars Hagberg and Ingvor Pettersson (Sweden 2013)</p>	<p>The Value of a Powered Wheelchair – Spouses' Perspective</p>	<p>Qualitative</p>	<p>The results from the interviews showed first and foremost that the spouses experienced that their everyday life and life situation had changed as their next of kin had received a powered wheelchair. They experienced a sense of freedom that had an impact on their own activities as well as on the activities they performed together with their next of</p>	<p>The interviews with the spouses showed that the value of a powered wheelchair was mainly connected to the experience of a sense of freedom in relation to own and shared activities. The interviews with the spouses also revealed that the powered wheelchair had facilitated shared social activities.</p>

			kin. The value of a powered wheelchair was characterized by a sense of freedom related to own activities.	
Cecilia Pettersson, Sophie Jörgensen, Lizette Mårtensson, Jan Lexell, a Björn Slaug and Susanne Iwarsson (Sweden 2013)	Mobility Device Use and Exploration of Housing Accessibility for Powered Mobility Device Users among People Ageing with Spinal Cord Injury	Quantitative	In all, 15% of the participants used a PMD indoors and 41% used such a device outdoors (Table 2). Among the participants with paraplegia, the manual wheelchair was the most frequently used mobility device and 25% used no mobility devices indoors. Further, only 2% used a PMD (pwrd moblt dev) indoors. Among the participants with tetraplegia, 33% used a PMD indoors, and 27% used a manual wheelchair. When it comes to use of mobility devices outdoors, the PMD was the most common mobility device used among those with tetraplegia. (Housing accessibility) Among users of PMD (using their device either indoors, outdoors or both), the environmental barriers that caused the most accessibility problems in exterior surroundings, entrance, and indoors. In exterior surroundings, refuse bin difficult to reach was the environmental barrier that generated the most accessibility problems, while at entrances doors that cannot be fastened in open position was identified as the most severe environmental barrier. Indoors, the environmental barrier that generated the most accessibility problems was wall-mounted cupboard and shelves placed high.	In conclusion, to enable optimal use of the PMD in the home and close neighborhoods, and support everyday activity and participation for people ageing with SCI, it is vital to take into account not only personal and environmental aspects but also the mobility device in question.

Augmentative and Alternative Communication

Citation	Topic	Research Design	Results	Conclusions
Margret Buchholz, Ingrid Mattsson Müller and Ulrika Ferm (Sweden, 2013)	Text Messaging with Pictures and Speech Synthesis for Persons with Cognitive and Communicative Disabilities – Professionals’ Advice for Successful Use	Qualitative	Results point to the necessity of individual assessments and that this is a time consuming task. It also shows a need of a supportive environment and of good cooperation with everybody involved to make remote communication and introduction of new technology work.	Together with previous studies, this study shows that according to OTs and SLPs, texting with picture symbols and speech is useful for remote communication for persons with cognitive and communicative disabilities. It also shows that professionals play an important part to fulfil the users’ goals concerning remote communication with TMSS. This is accomplished by close cooperation with the user and their network throughout the process of assessment and training
Margret Buchholz, Ingrid Mattsson Müller, Maria Olsson and Ulrika Gani (Sweden 2013)	Apps for Augmentative and Alternative Communication – A Forum on the Web	Both	Smartphones and tablets have taken place in the field of assistive technology and there are now many apps to use for people with communication difficulties. The long- term goal with this project is to increase knowledge and compile data on how smartphones and tablets may be equipped with apps to support the every-day life of people with communication difficulties. The overall goal with this project has been to increase knowledge and compile data on how smartphones and tablets may be equipped with apps to support the every-day life of people with communicative difficulties.	Builded forum based on research work. Gather knowledge and experiences and share them on website forum. To put together a basic Swedish vocabulary for communication.

<p>Andreas Richter (Sweden, 2013)</p>	<p>Alternative Telephony – Making Phone Calls using AAC or Sign Language</p>	<p>Quantitative</p>	<p>Focus is mainly on facilitating for persons who have difficulties making voice calls due to hearing or speech impairment, not including persons who have a hard time using an ordinary voice phone due to motor or cognitive impairment. PTS have been developing the relay services and both SIAT and PTS have promoted the use of mainstream technology as means for distant communication. Since county councils are responsible for providing end users with assistive technology (AT), they have been the main target of SIAT's (Swedish institution of assistive technologies) communication activities. Successful ways of using AAC to communicate over the Internet have been found in trials.</p>	<p>SIAT have been working in three projects during the last four years with developing the system in Sweden for providing assistive technology or mainstream ICT for distant communication to persons who cannot hear or speak in an ordinary phone call. The projects have been focused on helping reshape attitudes among professionals in the county councils as well as forming technical specifications for public procurements and guiding users to different technologies.</p>
<p>Margarida Lucas Da Silva, Daniel Gonc, Alves, Andhugopla'cidodasilva (Portugal, 2013)</p>	<p>Simplifying User-tuned Content Management in Assistive Software</p>	<p>Quantitative</p>	<p>Information and Communication Technologies (ICT) are of utmost im- portance in the field of assistive technologies. Previous research from our group has proposed Troc@s, a multimedia tool to help children with Autism Spectrum Disor- ders (ASD) in the development of communication skills. A cornerstone of Troc@s is the ability that the caregiver has to</p>	<p>Results have shown our approach to be adequate for regular use, as shown by the average completion time and low number of errors. During the test, we observed the caregivers difficulties, and most of them were re- lated with the concept of user profiles. All participants knew how to navigate in the folders, handle the files. Still, all of them struggled when dealing with the profiles. Most seemed to easily forget</p>

			<p>customize the tool according to the profile of each child, creating the need to have streamlined procedures for the caregivers to follow. In this paper we propose an approach for easy customization of the tool, and present results of a usability study conducted with several caregivers, which show that, although training is required, our approach is considered to be a simple and adequate solution for routine use.</p>	<p>the differences in the purpose of each profile folder, and how to operate them. The results in the SUS lead us to believe that the biggest problem is bound with the training and motivation towards the use of the platform, which requires some apprenticeship. This was especially noticeable in the older users.</p>
<p>Luís Garcia, Luis Oliveira and David Matos (Portugal, 2013)</p>	<p>Word and Sentence Prediction: Using the Best of the Two Worlds to Assist AAC Users</p>		<p>We studied the effect of using Sentence Prediction as a complementary technique to Word Prediction.</p>	<p>In this study we measured user performance in message composition tasks using different Word and Sentence Prediction configurations. Sentence Prediction only was the fastest configuration with a mean message composition rate of 21.0 WPM. The configuration that combines Word and Sentence Prediction was just a little worst with 18.8 WPM. The KSRs for these two configurations were very similar with 68.1% and 67.5% respectively. These measures were obtained with the system having full knowledge of all the sentences users had to compose. To measure system performance under more realistic conditions we tested the Word and Sentence Prediction configuration with variable levels of Sentence Knowledge (SK 100, SK 75, SK 50, SK 25, SK 0) and were obtained values of 16.8, 14.6, 10.9,</p>

				<p>8.6 and 8.2 WPM respectively. Results obtained for Word and Sentence Prediction configurations with low sentence knowledge (SK 25, SK 0) are very similar to Word Prediction only configuration (Test 1), around 8 WPM, which shows that Sentence Prediction doesn't slow down users when predictions have a low success rate. Results from this study will now be considered in our ongoing work that consists on the design and evaluation of a context-aware AAC system with text and pictogram prediction capabilities.</p>
<p>Mats Lundälva, Sandra Derbring, Annika Brännström, Bengt Farre and Lars Nordberg (Sweden, 2013)</p>	<p>Inclusive AAC - Multi-Modal and Multilingual Language Support for All</p>	<p>Qualitative (this was a project, not a pure research work)</p>	<p>The Concept Coding Framework (CCF) technology represents a long term commitment to develop and deliver an open infrastructure for multi-modal and multilingual language support for a wide area of applications. In this way the varying needs among several smaller groups of users of AAC (Augmentative and Alternative Communication) may be met as part of an inclusive environment of much wide-spread interest. With support from the EU via the AEGIS project, a "CCF-SymbolServer" has been developed. It can be installed locally on any of the major desktop platforms (GNU/Linux, MacOS X and Windows), or online, to support many kinds of local or web based services and networked</p>	<p>A CCF-SymbolWriter, an extension for symbol support in LibreOffice (or OpenOffice) Writer. It allows graphical symbol support for several kinds of needs. The support in the CCF-SymbolWriter extension has been extended and now handles multi word expressions and the possibility to interchange a word for a given symbol (This means that you could write 'dog' to get the symbol for dog in your document - and then replace 'dog' with the name of your own pet.) A new CCF supported version of Special Access to Windows (SAW 6)20, an advanced free and open-source on-screen-keyboard application that allows the creation of symbol selection charts for the control of any mainstream program on a Windows system.</p>

			<p>mobile systems. In any of these environments the CCF-SymbolServer can provide its multilingual and multi-modal representation services to other applications. Four such applications will be presented: 1) CCF-SymbolWriter, an extension for symbol support in LibreOffice/OpenOffice Writer; 2) CCF-SymbolDroid, an AAC app for Android mobile devices; 3) the new CCF supported version of Special Access to Windows (SAW6); and 4) "Nysnö", a web based prototype for symbol supported easy to read news text. Future perspectives will be discussed.</p>	
<p>Mafalda Mendes and Secundino Correia (Portugal, 2013)</p>	<p>Combining Research, Theory and End User Experiments for Suitable AAC Apps</p>	<p>Qualitative (a case study)</p>	<p>The increasing dissemination and wider access to mobile devices, as well as the spread of applications in several areas requires us to rethink the technologies for Augmentative and Alternative Communication (AAC). There are now over a three hundred applications for AAC available on the market, at a considerably lower cost when compared to traditional communications systems. However, the exponential growth of the number of these applications is concerning some AAC professionals about the impact of</p>	<p>The fact that these applications are less expensive than traditional AAC systems should not be seen as an indicator of inferior quality. The migration of traditional communication systems for applications available on mobile devices is a complex and time consuming process that requires a redesign of AAC technologies and an intense research work. So it is essential to integrate in the planning and development teams of these applications AAC professionals, family members, caregivers and the individuals with CCN, aiming to meet the real needs of end users, and to</p>

			<p>this new approach and raises several relevant questions. This article considers the challenges of a new era for AAC technology, combining theory and practice on the development process of a specific application named Vox4all®, and also suggests paths, new approaches and mind- sets for future research.</p>	<p>ensure they are appropriate to their abilities. It is necessary to go beyond the propagandist statements, to effectively test the applications and to discuss the results in order to reach an inclusive and appealing design with features that really matter. Finally, there should be greater awareness among professionals, parents and end users, but also the general population, which is only possible with more and accurate information about the applications. This requires easy access to demo versions, user manuals, training and web content with clear information about the software features and potentialities.</p>
<p>Toyohiko Hayashi, Toshimitsu Yamaguch, Maiko Iriyama, Satsuki AOKI and Yukiko (Japan, 2013)</p>	<p>Development of Versatile Voice-Output Communication Aid VCAN/2A and Its Customizing Support System</p>	<p>Qualitative (a case study)</p>	<p>We have been developing a versatile voice-output communication aid named VCAN and its customizing support system. VCAN has an innovative feature of being fully customizable in both page design and hierarchical page structure. It was verified to have high versatility in application through several case studies. Then we could apply VCAN effectively to children with a wide variety of intellectual and developmental disabilities. The customizing support system is also effective for middle users to easily design and update VCAN.</p>	<p>Case A became to be able to 1) call friend's name; 2) to act as the chairperson in daily ceremonies under teacher's assistance; and 3) to demand more, all by means of his VOCA. When Case B wanted to express her feelings, she became to be able to use her VOCA voluntarily and to imitate VOCA's expressions. Finally, she has learned "procedure for doing something" with the help of her VOCA. Case C became to be able to speak very often 6 months later after VOCA intervention. Improvement of both phonological awareness and syllable articulation was observed, although serious phonological disorder still</p>

				<p>remained. Three months later after that, when a picture of blue big shoes was presented to him, he said [ookii] (big), [kutsu] (shoes) and [ao] (blue), while he simply said [ao] (blue) before VOCA intervention. When a picture of a dog washing a rabbit was presented to him, he said (p352) “A dog washes a rabbit”, while he said nothing before. Then we decided to start his articulation training and practice of writing. At this point, he graduated from the use of VCAN. Now he enjoys studying in an ordinary class under the supervision of speech therapists</p>
<p>Ana Londral, Luis Azevedo, Anabela Pinto and Mamede Carvalho (Portugal 2013)</p>	<p>Monitoring Written Communication Contribute to More Effective Decisions on AAC Devices during Rapid and Progressive Conditions of ALS</p>	<p>dQuantitative data collecting/ qualitative analysis</p>	<p>In this paper we suggest that a better comprehension of written communication is important to evaluate communication progression and to decide on better approaches for AAC selection and delivery. We studied a group of ALS patients who used a tablet device with AAC software for text-to-speech communication. Internet communication was stimulated, learning periods and acceptance factors were observed. We monitored speech, handwriting and typing performances, in approximately 3 month-periods during a total period of 9 to 12 months.</p>	<p>Results suggest that handwriting and typing functions should be monitored in order to better decide on AAC devices, namely those supported on tablet (touchscreen) or regular keyboard access, and find markers for introducing new interfaces for AAC access. Relevance of this study is to have a better understanding on predictors of acceptance and time markers to effectively manage AAC in a rapid and progressive process of degeneration.</p>
<p>Kim Adams, Adriana</p>	<p>Learning Switch Scanning</p>		<p>Manipulating and controlling</p>	

<p>María Rios Rincón, Pedro Encarnação, Gonçalo piedade, bruce helmbold, corinne tuck (Canada and Portugal 2013)</p>	<p>Skills by Playing with Robots</p>		<p>assistive technology (AT) tools remains challenging for some children with severe multiple disabilities. In the area of communication, for example, augmentative and alternative communication (AAC) via switch scanning may be an optimally viable option for children with significant physical limitations. However, children’s acquisition of switch scanning may be hampered by the dearth of evidence-based training protocols and the cognitively demanding nature of the task, diminishing motivation. Introducing AAC scanning skills may be facilitated by incorporating switch-controlled robots. Robot mediated play tasks can be designed such that specific switch scanning skills are trained in a potentially engaging setup. This paper reports the technical developments of physical and software-driven virtual robots controlled using switches to perform different play activities. A robot mediated switch training protocol informed by end-user trials is also reported.</p>	
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