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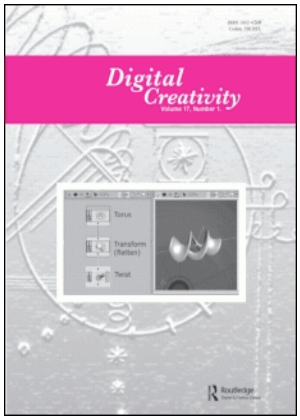

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editorial

ArtAbilitation

The inaugural international conference *ArtAbilitation* was hosted at the Utzon-designed Centre for the Performing Arts, Musikhuset Esbjerg, Denmark in September 2006. It supported the renowned *International Conference for Disability, Virtual Reality and Associated Technologies (ICDVRAT)*[1] which celebrated a decade of biennial conferences. Thus a claim was made for the hosting of 'The conference of the decade'!

'ArtAbilitation', as an open conceptual entity, carries—through its mission statement—manifold interpretations. The concept has emerged out of a new evolving platform for interdisciplinary research, knowledge exchange and product development entitled *SoundScapes*.

The *SoundScapes* concept involves the use of sensor technologies that are not worn on the body and involve human data capture from movement within an invisible volumetric information space. This data is mapped to personalised multimedia which is experienced as a virtual environment. This capture technique and mapping strategy empowers intuitive and natural control through gesture for motivated engagement with the virtual environment. The personalisation of the interactive environment enables utility as a new therapeutic supplement for practitioners. *SoundScapes* was featured in an article in *Digital Creativity*, vol. 16, no. 1, pp. 43–53 and is the subject of a book that is currently being written.

Scientific reports on alternative realities such as virtual reality (VR), augmented reality (AR), mixed reality (MR) and artificial reality are as welcome in *ArtAbilitation* as are the most basic of assistive devices like a single switcher. Hardware and software, digital and analogue, positivism and hermeneutic are all amongst targeted topics.

Too diverse? Possibly but let me explain a little more…

Some may refer to the term 'ArtAbilitation' from a linguistic perspective and interpret it as in 'Art (Reh)abilitation' and thus directed at art therapists who use art forms such as painting, music, dance, theatre and movement in practises that give benefit from within rehabilitation to the community of, for example, those with a disability or damage. There are also other groups for whom an alternative interpretation has been suggested. These are groups closely linked to therapy but differ in that they are categorised as not capable of rehabilitation but, rather, undergo abilitation. In other words, due to the severity of their dysfunction they are classified as regressive. This group is addressed so as to give whatever quality of life is possible with whatever functional ability they have and according to the human resources available. Addressing optimally requires passionate meaning and conviction, as in art. However, as Davies (2005) states, this group is often excluded from research or healthcare funding due to their inherent complexities or diverse characteristics. Despite being a rich resource from within which to explore unchartered avenues of human research, this exclusion from funding possibly brings it even closer to art! Consider for a moment when a person loses a sense and is categorized as disabled, often it is witnessed that a compensatory sense becomes strengthened. A blind man's nuances of profile, feeling of space or auditory perception all grow into a heightened state. This arbitrary sensory nuance is fertile ground for the development of future art, artist and audience. Yet, many steer clear of the blind man tap, tap, tapping across the street, not realising his listening to the echo of his cane sounding against the targeted sidewalk or pavement is giving him distance feedback.

With current predicted demographic trends the balance of people with disability versus those without is changing towards an unprecedented predicament for society. Eurostats (ec.europa.eu/eurostat) inform of an increased aged population, decreased workforce and extended life expectancies. The aged population is where disability figures predominate.

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Figure 1. Live music from the delegates at *ArtAbilitation*.

This means a population that is increasingly 'computer savvy'—which thankfully will drag them away from a semi-circular stagnation in front of the pacifier with remote control. Designers, researchers and practitioners will all be involved in considering the targeting of these demographies which is evident from activities in Europe regards funding initiatives for sustainability. And even when we consider what is classified as disability we must in the same sentence ask, what is normal?

For such groups, and I include all of the above, I suggest an interpretation of *ArtAbilitation* as being: 'Art of living'; as in 'Art (h)abilitation'—thus I make my point for establishing a conference on approaching the use of technological solutions from a human-centred perspective, and where the art is in more than just creating and researching the technology but more so in its use and the human affect.

53 oral presentations were given during the three days of *ICDVRAT* and *ArtAbilitation* with the exhibition spaces fully booked for the duration and featuring demonstrations and talks by such known global corporate names such as SONY and B & O, alongside smaller entities, namely Personal Space Technologies B.V. (PS-tech), Personics, Soundbeam, Qualisys AB, Routledge, Natural Point, WorldViz, PS2 EyeToy, TV Glad, EAVEST, ProShop Danmark, Soundscapes, Specialisterne, Fysioterapeutuddannelsen CVU-VEST. The exhibition was supplemented by art installations and presenter demonstrations.

Selected papers from the *ArtAbilitation* conference are featured in this issue. The first is from the University of Nottingham and is a co-authored UK paper titled 'Interactive flashlights in special needs education' (Cobb, Mallet, Pridmore and Benford) that reports on an innovative use of an affordable interface that is available in all homes and off the local supermarket shelf. The computer vision software utilised in the patent-pending invention enables the interface to "magically bring to life" objects and areas that are used for children with special needs in exploration, play and learning activities toward development. Cobb built an interactive demonstration at the conference for delegates to experience the concept.

The second paper is from a team from Holland who presented the *E-scope* invention at the conference exhibition to support their paper titled 'Explorascope: stimulation of language and communicative skills of multiple-handicapped children through an interactive, adaptive educational toy' (Hummels, van der Helm, Hengeveld, Luxen, Voort, van Balkom and de Moor). An adaptive educational tangible toy-like interface, the *E-scope* was designed as an augmentative and alternative communication (AAC) system to stimulate language and communication skills of children between 1–4 with multiple handicaps.

Figure 2. Delegates at the conference venue.

The third paper is titled 'Empowered interaction through creativity' (Hasselblad, Petersson and Brooks), a collaborative effort from Scandinavia with Sweden and Denmark both involved in the study. Steffan Hasselblad is from a special school in Landskrona, Sweden, with over thirty years' experience in the special needs of PMLD (profound and multiple learning disabled). The paper reports on the single case study he led that featured an autistic young adult with severe physical and behavioural dysfunction, interacting within an immediately responsive multisensory active environment where non-intrusive technological interfaces (two soundbeams) were used alongside traditional switch interfaces to great effect.

The fourth selected paper is from another experienced team, this time from the University of Sunderland, England and entitled 'Facilitating the experience of agency through an intersensory interactive environment' (van Leeuwen and Ellis). The study focused upon elderly people living in sheltered accommodation who creatively express themselves through their voice, microphone and special-effect units that manipulate the output, or/and their movement via the non-intrusive sensor *Soundbeam* with output mapped to a sound module. The study is a part of a long-term research called *iMuse* and current evaluation strategies are reported.

Another multisensory system is presented in the paper entitled 'The Picturing Sound multisensory environment: an overview as entity of phenomenon' (Williams, Brooks and Petersson), which reports on three case studies of children with PMLD in a study led by Ceri Williams. This paper describes a standard video-camera-based system that uses the gratis software package *EyesWeb*. Algorithms enabling a captured image of the child to produce 'digital painting' and auditory feedback that is responsive to gesture, both in colouring, patterning and style, is used. The findings in relation to the children and staff, whilst being encouraging for the field, point to the need for targeted action to increase awareness of the potentials in creatively utilising such affordable technologies for these children and others throughout the hierarchical educational system, and not just in the UK.

Staying in the realm of children with severe disability, the next paper from Portugal is titled 'Real-time composition of image and sound in the (re)habilitation of children with special needs: a case study of a child with cerebral palsy' (Azeredo). This paper again features digital painting through gesture along with auditory feedback. The *Max/MSP* software was used in this study with camera input. Reported were improvements in quality of movement control, intentionality and behaviour.

This issue closes with a paper titled '*MusiCam*: an instrument to demonstrate chromaphonic synesthesia' (Yau and McCrindle). A design prototype was exhibited to support the paper. Appropriately to the location of the conferences, *Lego* bricks were used for the easily-manipulated coloured interface that produced musical tones. This was from a device made up of a circular disk that rotated the *Lego* bricks into the field of view of a standard web camera. Possibilities were presented where the mapped image/computer vision algorithm enabled control, composition and communication to all be considered as an output across genres.

A later issue of this journal will feature

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further selected articles resulting from the *ArtAbilitation* conference.

The conference in overview

The week began with pre-registration at the Svømmestadion Danmark, which is Denmark's largest leisure facility of its kind. Gratis use of all facilities encouraged delegates to disrobe to meet each other for the first time (a Scandinavian quirk to the proceedings!)—and enjoy the steam baths, saunas, jacuzzis and Olympic-size swimming pool, slides and wave machines, etc. This was followed by a garden barbeque with live music (delegates and organisers jointly hitting, plucking and strumming and generally getting involved and having fun —see Figure 1)—and Danish/Welsh/Swedish hospitality of food and drinks was not refused. In fact some of the graduate students who were attending their first conference were heard asking their professors whether it was always like this?

On the Monday morning the venue featured a large banner announcing to delegates they had found the right place (Figure 2).

Supporting the initiative international research students were granted gratis attendance, as were students from Danish educational institutes with gratis CD conference proceedings and DVDs/CDs to volunteers. This was to promote synergies between national and international student milieus and was a great success that was strengthened by the student 'happenings' each evening supported by the conferences in the form of gratis live music, food and drinks.

The mayor of Esbjerg city and region greeted delegates with a speech given at the reception that was held at the Fiskeri-og Søfartsmuseum (the fish museum) which stands on the coastline overlooking the North Sea coastline and the famous *Four Men* statue. One of the local fisherwomen even made an appearance in traditional costume (Figure 3).

The conferences have been the subject of mass media coverage including National radio, TV and newspapers. Esbjerg is the fifth largest city in Denmark and as a result of the conferences in September it is now known at the far corners of the world as a fantastic conference location with everything one needs to ensure an enjoyable, sharing and learning experience for all. Many seasoned conference delegates that were attending agreed when one stated that it was "the best conference ever attended bar none!"

Figure 3. Esbjerg City reception for the *ArtAbilitation* conference

The conferences were a featured part of the innovation festival in Denmark and led the way in substantiating the claim of Esbjerg as being a city and region of education, art and culture. In January 2007 Esbjerg became the regional figurehead and is actively promoting the city as a top conference venue.

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Note

[1] *ICDVRAT* conference papers can be found at www.icdvrat.rdg.ac.uk/archive.htm

Reference

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