Towards Inclusive Design: Using gesture-based interactive arts environments support a range of outcomes for people with a learning disability.

Engaging people with complex needs in activities in ways that are meaningful for them is a challenge faced everyday by the people who support them. The advent of interactive technology has enabled many people with physical, cognitive and sensory disabilities to access a diverse range of devices to communicate, control their environment and participate in a diverse range of activities. The work of Cariad Interactive leads the way in extending this opportunity to people with learning disabilities.

The key to Cariad Interactives research practice is the use of participatory design. Participatory design actively involves all stakeholders to ensure the outcome meets their needs. It ensures not only support staff and families but also and most importantly people with learning disabilities are actively engaged in the design process. Designing from concept to reality by exploring and learning through face to face experiences helps shape the outcome to truly reflect learnings from the process. Co-creation helps “bridge the gap” from disconnection to participation and inclusion. The results to date have been some highly motivating, free applications that support staff, teachers and families find easy to use with everyday portable equipment.
Dr. Wendy Keay-Bright

Dr. Wendy Keay-Bright is an award winning designer with over two decades of experience in the area of interaction, animation and moving image design. She is Design Director at Cariad Interactive and Director of the Centre for Applied Research in Inclusive Arts and Design (CARIAD) at Cardiff Metropolitan University, Wales.

Wendy’s practice-led, action research projects have been collaborations with people who are very difficult to engage including people with autism, profound intellectual and multiple disabilities, profound anxiety and complex communication needs. She has pioneered a variety of methods for co-creation, including role play, performing and prototyping, in order to discover novel ideas for interaction. The resulting software encourages user directed social interaction and creative exploration that promotes greater self-awareness, confidence and independence. Her projects including ReacTickles®, ReacTickles Magic and Somantics have delighted audiences worldwide, leading to free software, Apps, resources and research that demonstrates the impact of inclusion and playfulness in design innovation.

Since winning her first NESTA Award in 2005 Wendy has accessed significant funding for projects that raise awareness of the abilities of marginalised groups. Her current project, Somability, has enabled adults with profound disabilities to develop new skills and confidence in dance. Their improvisational pieces have been performed in several prestigious arts venues. Another new project, Somatopia, is pioneering inclusive design methods for novice programmers. Wendy has published her work internationally. She also regularly volunteers for inclusive theatre and dance projects.

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Workshop Outline

**Aim:** To enable participants to plan, design and create inclusive digital arts activities to support a range of outcomes for people with a learning disability.

**Content:** The workshop will offer participants the opportunity to prototype their own novel interactive environment, with the overarching aim of INCLUSION. Two recent inclusive design projects will be presented, Somability and Somatopia. Both projects are piloting the use of affordable camera technologies to encourage full body (soma) interaction. Practitioners using the prototypes have reported increased creative, aerobic and therapeutic activity for people with disabilities, as well as those who care for them.

The workshop is intended to operate in a highly collaborative atmosphere, allowing for participation within a responsive, respectful, creative structure. The activities will offer technological exploration in order to address the real challenge of workplace innovation. None of the activities require prior expertise in digital making. We will use a range of paper-based resources, gradually adding interactivity to test out our ideas.

The two applications we will be using, **Somability** and **Somatopia**, share the overarching goal to make movement an irresistible, playful and highly expressive experience, however, the way in which they can be applied is different.

**Somability** uses off the shelf game technologies, which can be connected to a computer or TV screen. It is accessible, inclusive and easy to use. Visually dynamic graphics respond to user action, making any movement highly observable and playful. The interaction model is informed from interactive arts, dance and sensory integration theory.


The first version of Somability is free to try out on the Windows Store.

**Somatopia**, on the other hand, is an inclusive design kit for gesture-based interaction. Somatopia is aimed at enabling users and their support person to design their own motion and sound applications using the RaspberryPi computer. Somatopia includes resources to prioritise understanding the user characteristics, as well as software applications that can be used directly from an interface, or modified to reflect the context of use. Four themed interactions (Call & Response, Mirror, Space and Flow) offer a rich variety of flowing gesture-based interactions, which are by their very nature, inclusive.

Workshop Structure

Wendy will introduce the research and design activities for Somability and Somatopia including video examples and live demonstrations.

The workshop will then be structured into 3 parts:

(1) Listening and Perspective Taking.
Bring together participants with a view to understanding how we might use gesture-based interaction to support inclusion.
OUTPUT: large paper based lists that note expectations, strengths, weaknesses, opportunities and limitations.

(2) Why and How?
Participants work together to create design concepts, using inclusive design tools (Passports, Storyboards, Paper Prototypes and Conductive Paint) to explain their ideas. Participants will be encouraged to collaborate in teams that cross disciplines. Each group will work within a theme: using themes: Learn, Look and Try.
These themes are deliberately broad, however, a Learn theme would suggest that the outcome for the beneficiaries aligns to a learning goal; a Look theme, suggests that the output invites observation, as in an expressive piece, a performance, exhibition, etc. A Try outcome could manifest in an opportunity to be truly exploratory.
OUTPUT: Passports; Storyboards; Paper Prototypes

(3) Plans and Actions.
Teams work together to develop their interactive art session. Each team will demonstrate their ideas to the whole group, inviting reflections and feedback.
OUTPUT: a planned session using an existing application, a performance, a fund raising activity, exploratory research, or a new application.
Why should you attend?
Somability and Somatopia offer you new resources to use when supporting someone who has difficulty interacting and participating in activities.

Who should attend?
Direct support staff, teachers, speech pathologists, occupational therapists, parents and anyone else interested in providing inclusive opportunities for people with learning disabilities.

Event Details
Spaces are limited. Wendy's last workshop in Melbourne sold out quickly.
Don’t be disappointed. Register now to ensure your place.

Date: Monday 10th November, 2015
Time: 9:30am - 4:00pm
Venue: Multicultural Hub
506 Elizabeth Street, Melbourne VIC 3000
Cost: $330.00 per participant
Register: Online with a credit card at http://towardsinclusivedesign.eventbrite.com.au

For more details, including a comprehensive workshop outline, please visit the Scope website www.scopevic.org.au or contact Scope’s Communication & Inclusion Resource Centre:

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