



Making Movement Irresistible WORKSHOP FOUR

Cardiff School of Art and Design
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Participants

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Anna Lewis: *Cardiff Metropolitan University*
Natalie Ravenscroft: *National Activity Providers Association*
Zoe Robson: *Lead Exercise Specialist, Belong*
Ben Ewart-Dean: *Film-maker*

Online

Cathy Treadaway, Heidi Wilson (online due to adverse weather conditions), *Cardiff Metropolitan University*
Catherine Young, (online due to adverse weather conditions), *Dawns i Bawb*
Renee Groenevelt, (online due to adverse weather conditions): *Hywel Dda UHB*

Joel Gethin Lewis, *University of Arts London*
Dr Lise Amy Hansen, Felicia Nilsson, *Oslo School of Architecture and Design*
Ruth Welsh: *Activities Co-ordinator, Bright Horizons*
Maggie Dunning: *Development Officer, Arts Council of Wales*

The workshop took place in the design studios at Cardiff School of Art and Design. Seven people took part in the studio, but due to adverse weather conditions on the day, four people who had planned to attend participated online. They were joined by other members of the team who elected to participate online for geographical reasons. Two of the Cardiff Met project team were online which helped to facilitate engagement. Feedback from the online participants stated that this worked well, and they felt fully involved.

Aim of the project

Making Movement Irresistible (MMI) is a research project funded by an Arts Council of Wales, National Lottery Health & Wellbeing award with additional innovation funding from Cwm Taf Morgannwg University Regional Partnership Board. Hosted by a multi-disciplinary academic team from Cardiff Metropolitan University, the aim of MMI is to develop digital, online and wearable accessories that encourage improvisational movement interactions with older adults in residential settings.

Working within a co-creation model, this pan-Wales project is being designed with dance practitioners, Catherine Young, CEO Dawns i Bawb, Parkinson's dance specialist Heidi Wilson, and health professionals from Cwm Taf Morgannwg University Regional Partnership Board. In addition, we have participants representing organisations who have a key stake in the implementation of any outputs emerging from the research. These stakeholders are: [Hywel Dda UHB](#), [National Activity Providers Association \(NAPA\)](#), [Digital Health and Care Wales](#), [Belong](#), [WAHWN](#) and [WSSPR](#).

This collaboration is intended to ensure that any proposed intervention can attune to the creativity in everyone, whilst at the same time targeting health and wellbeing objectives. Our primary activities have been five iterative, co-design workshops, that address *who, what, why, where, when*.

Workshop One asked: **Who are we designing for**, and **what might make movement irresistible** for this audience?

Workshop Two explored **What could we be creating?** The objective was to scope the technological, artistic and bio metric potential of MMI in relation to the findings from workshop one.

In Workshop Three we presented ideas for a MMI concept using **low-fidelity prototypes** inspired by the findings from workshop 2. Participants were invited to create stories, scenarios and journeys that would prompt them to consider how they would implement the concept in care settings.

The overarching aim of workshop four was to ensure that **research and innovation** is grounded in authentic creative partnerships. The objective of the workshop was to gather sufficient feedback from participants to enable us to refine the concept. These refinements refer to the intervention as a holistic arts and health experience, rather than the physical prototype in isolation, enabling our dance, physiotherapy and activity provider partners to experiment in real life residential settings.

This report will provide a summary of previous workshops as background information, and a brief description of workshop four activities. The main body of the report documents participant responses to key questions that will inform specifications for refinements.

Summary and findings from previous workshops

Workshop One: Who?

In the first workshop each participant made a bespoke sock puppet, which was utilised to make introductions to the project and the team. Beginning with guided activities, the puppets were used to seek opportunities for collaborative, creative movement. Our findings suggested that the use of puppets or a hand-held prop can extend movement beyond the body, add curiosity and improvisation to a simple movement and make connections with others. Using a prop that has been personalised can increase interest, although the prop itself should be the route to exploring the creative potential of movement rather than defining it. We also asked *who* would be the users or target audience for this work? Although we were aiming the movement intervention at older people in residential settings, we need to be working with the stakeholders who are already in a close relationship with this community. From workshop one we identified these people to be carers, arts and health providers/facilitators, family members and friends. To find out more about these relationships we invited our participants to create personas and stories that captured the individuality of stakeholders and the nuances of day-to-day settings and situations.

We asked our participants to describe from personal experience and barriers they had encountered when using, or intending to use, technology in their settings. The main barriers were reported to be motivation, confidence and digital literacy; lack of training and technical support; accessibility, which included environmental issues such as space, light and connectivity.

Workshop Two: What?

The aim of workshop two was to ask *what* is the artistic potential and health opportunities that emerging through this project. Building on the activities and findings from workshop one, we began to experiment with electronic components that could feedback creative and functional movement data - light and heart rate. Participants were given basic circuit making materials, which could be sewn into their puppets.

A creative movement activity began with the puppets interacting, but when then explored call and response, proximity and space. Feedback from this workshop stressed the need to build on easy to perform movements that could be extended and repeated overtime.

The introduction of light effects that respond to, and augment, specific actions performed from the hand, could increase the motivation for repetition and effort, and, with the appropriate level of partner engagement, arouse curiosity for playful exploration. An ambition to link increase in heart rate to light effect was also discussed. From the perspective of physio and occupational therapy, actions such as tilt and wave; supination and pronation; flexion and extension; up-down, side to side, forward and backward, were suggested as important starting points for encouraging the skill and effort to move functionally. From a creative perspective, these movements could become part of a movement conversation, or feedback loop, using techniques such as mirroring, tracing, tracking and mapping. The opportunity to increase heart rate could be further optimised though repetition, speed, duration and distance.

Workshop Three: How?

Workshop three brought the elements for workshops one and two together into a tangible prototype. The role of the research team was to explain why and how digital and wearable accessories could encourage improvisational movement interactions with older adults in residential settings.

Participants used the prototype to generate stories and scenarios for how the concept could be implemented and explored within a variety of practice situations.

Feedback reinforced the need for the box to be attractive in order to motivate practitioners to experiment. With many services being stretched and target driven, practitioners would need an incentive to engage with such novel resources, and reassurance that their effort would pay off by enabling them to reach particular goals with their clients. In this respect, the concept must clearly offer something more than anything else available to them. Scenarios created by participants also suggested that activities using the concept would need more than one *mitt*, and that older users would always be moving in a partnership with a facilitator, who may be a carer, activity provider, therapist, family member or friend.

The question of how data capture could enhance creative and therapeutic practice triggered a range of responses. Both arts and health practitioners supported the idea that visualising data in an aesthetically interesting and responsive a meaningful way contribute to new ways of generating artforms that align with health objectives. For example, heart rate data that visually maps the effect of movement could inspire opportunities for experimenting with pace, duration, rhythm, and repetition. Visual data could also be a motivating feature for maintaining motivation where improvements can be observed during a session and monitored over time.

The scenarios and exercise books captured a range of opportunities to personalise the mitt through the addition of the assets. In terms of moving the concept forward, many of the suggestions for personalisation referred to elements such as personal choices of sound and imagery, which could be added to an experience without the need for technology. In the interest of research and innovation, for workshop four we focused on prototyping refinements that could not otherwise be included, such as heart-rate response and light effects.

Finally, the prototype would need to be compliant with infection control measures. The following section of this report will describe the activities and findings from workshop four and will conclude

with suggested refinements to a prototype that can be explored by arts practitioners in real-life residential settings.

Workshop Four: Refinements Research and innovation must be grounded in authentic creative partnerships

To address this aim we structured the workshop around the following questions:

1. *How do we provide meaningful interactions between facilitator/partner and older person?*
2. *What data will facilitators need?*
3. *How do we encourage sustained engagement?*

Following an overview and recap to the project, we presented proposals for a refined concept designed to embody three emerging themes from our previous workshops:

1. *Ease of use*, the system must be accessible, easy to set up, understandable, and provide agency for a facilitator to use as desired with individuals.
2. *Simple*, but motivating for facilitators, it should be aesthetically interesting and playful.
3. *Data* is important for both creativity and functionality, the system must be capable of gathering useful data, meaningful feedback and evidence of engagement.

Summary of Responses

Responses to these questions from participants in the studio were captured using flip charts and post-it notes, exercise books, video recordings and interviews. Those taking part online documented their responses in the online chat and in their own notes which were emailed and added to the exercise books. With consent from participants, the online stream was video recorded.

How do we provide meaningful interactions between facilitator/partner and older person? In response to this question, the participants stated that stages of interaction could support engagement by prioritising human to human connections before introducing any technology, this would encourage personalisation without the pressure to learn a new process. The journey toward digital could encourage novel creative experimentation and enable relationships to be valued before, during and following the use of the mitt. In this way the role of the technology is not only to augment movement in real time, but to use the heart rate data to provide information for designing future activity.

Two participants suggested that developing the relationship between partners could be motivational for an individual. Having fun is a meaningful interaction, and simple enjoyment may help to meet the more functional goal of rehabilitation.

Participants stressed the importance of training for all residential care staff as well as external providers to ensure that the system is used over time rather than as a novelty with limited appeal. Resources such as case stories, video examples and testimonials are essential, particularly as not everyone would appreciate what constitutes 'movement'.

What data will facilitators need? This question elicited a range of responses that reinforced the idea that data could be creative as well as functional. Both arts and health practitioners agreed that data should serve a clear purpose, and the notion of purpose needs to be explored further, particularly

when it is not addressing a goal or function. Purpose is strongly linked to motivation, but the motivation to move may not be of interest to an older person.

To improve neuroplasticity it is important to increase intensity and repetition, capturing heart rate could guide this process and the data would show therapists the range and level of activity, for example the speed and force, and the duration of engagement.

Visual data could help dance artists gauge the level of intensity an individual is experiencing and assist in avoiding stress and maintaining 'safe' levels of movement practice. Data may help us to assess mood, before and after an activity.

The post-it note and flip chart activity elicited more specific responses that reflected the motivation of the participants from arts and health. From a health and exercise perspective, it was suggested that data could capture reaction times, movement range, stability and muscle endurance, heart-rate variability, duration, reach and flexibility, range of movement, effect of movement on cardiovascular function. From an arts, activity and well-being perspective, it was suggested that data could be used to monitor wellbeing, creativity, positive experiences between partners, personal stories, engagement, mood and progression. The pragmatics of how well the system was working was also addressed.

How do we encourage sustained engagement? It was stressed by participants that to be effective and to maintain neuroplasticity an exercise intervention needs to be repeated regularly and with high intensity, there should also be an appropriate level of cognitive challenge and should stimulate as many senses as possible, however there needs to be a degree of caution to avoid overload.

We also asked *What makes this project special?* The purpose of the question was to try to document any nuances in the idea that would make it distinct from other interventions.

1. *Magical, inspirational.* Responses from participants online suggested that it could appeal to those for whom sport and exercise would be off-putting, and that the notion of *magic* could make application more universal. Another participant pointed out that being prompted to move as a result of feeling inspired rather than meeting a goal could be more motivating. However, the lack of definition could also make it difficult to motivate facilitators who rely on targets. The clinical physiotherapist noted that it was often difficult to persuade clients to keep up with their exercise routines, and that repetitious activities are at risk of becoming boring. She felt that this technology could engage people and keep their interest over a longer period of time. If the technology could improve adherence, then it will be offering something that is missing with other interventions. To improve neuroplasticity it is important to increase intensity and repetition, capturing heart rate could guide this process and the data would show therapists the range and level of activity, for example the speed and force, and the duration of engagement.
2. *Non-threatening, creative.* One of our dance professionals stated that because the technology was non-threatening it could leverage more opportunities for gathering evidence of the benefits of moving creatively. Visual feedback could enhance creative practice and could be used as a tool for developing individual interests.
3. *Collaboration.* The opportunity for arts and health practitioners to share expertise and for this to inform the design of technology. Working this way is person-centred rather than technology centred. This kind of collaboration over time could lead to an inclusive technology that removes inhibitions about 'dance', making it more accessible to diverse learners.

Intervention in action: scenarios and stories

For the final activity we repeated our method of storytelling from workshop 3 and invited participants to describe scenarios in which the intervention could be used. The intention of this method was to try to find the gaps in our thinking when too much emphasis is placed on the prototype system and not enough on imagining how it might be used over a time period.

Online participants worked together to propose a scenario for dementia care that would focus on an arts-based introduction to movement that allowed for a personal goal to emerge. The interaction would be social beginning with the hand and leading of more creative movement. A physiotherapist could assess the movement from heart-rate data and suggest enhancements to help reach the goal. Essentially the goal should include social interaction, for example with family members or other residents.

Creative Evaluation

The project is structured in such a way that evaluation is embedded from the outset. Dissemination in the form of an accessible, credible, and useful case study provided the themes for each of the five workshops: who, what, why where and when.

Participant feedback is gathered using a variety of methods and used to inform the development of the project outputs as well as the design of each of the workshops. Our methods for documenting participant engagement have evidenced a sense of ownership and willingness to reach out to new networks as participants see their contributions inform each stage of the project. The MMI exercise books are being used to capture individual ideas and feedback. Each participant has their own exercise book (see image) which is collected at the end of each workshop and returned to the participant at the beginning of the next.

At times when participants have been unable to attend, they have emailed notes which are then printed and added to the respective exercise book. The books have plain and lined sections, and participants have been given free choice on how they document their contributions. To date these have included drawings, diagrams, text and poems.

Other data has included transcripts from online chat when participants have joined on Teams. All participants have given consent for the workshops to be recorded and for a short film capturing their contributions to be published on the project website. They have also consented to the Teams meetings being video-recorded.

Data from the workshops is analysed by the project team using the key questions from each workshop. Descriptions, data, analysis and findings from each workshop are documented and shared on the project website. Following advice from Cardiff Met Research and Innovation services, workshop Four was not published on the project website. At this crucial stage in the project we are aware that our Intellectual Property could be comprised should we reveal descriptions of a product that has potential to be commercialised.

A short film of each workshop is also released. Presentations have been given to partner organisations between each workshop, ensuring that a wider network of participants are informed and can influence the development of the concept.

Workshop Five: Lessons Learned

Workshop five will foreground and share what can only be learned through the risk, the journey and the imperfect mode of research and design that evolves during iterative collaborative experimentation.

Lessons learned from the questions of who, what, when, where and why will be explored to allow us to draw attention to opportunities for how our proposed intervention can be sustained through the continuation of authentic arts and health collaboration.

The intervention we offer not only validates the shared experience of exploration, choice and distillation, but makes it tangible, as expertise. This is one of the most valuable lessons learned.

Wendy Keay-Bright