The Drake Music Project Northern Ireland & Sonic Arts Research Centre 2016 Collaboration

"Performance without Barriers" Project Report

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Project Summary

June – November 2016, six invited interface/Digital Musical Instrument (DMI) designers worked with Drake Music NI, a charity that aims to enable disabled musicians to perform and compose their own music through the use of music technology, in order to develop musical instruments for and with disabled musicians.

This project was a follow up to "Big Ears 2015". Big Ears is a project initiated by Dr Franziska Schroeder from the School of Creative Arts, Queen's University Belfast in 2011. The project seeks to engage both specialist and non-specialist audiences in activities relating to new music technologies and the wider field of Sonic Arts. Big Ears 2015 was held under the theme: "Designing Inclusive Interactions" and took the form of a collaboration between SARC and The Drake Music Project Northern Ireland, a charity working for over 20 years to enable musicians with physical disabilities and learning difficulties to independently compose and perform their own music through music technology. The programme took place over 3 days within SARC, bringing together student musicians, engineers and programmers alongside disabled musicians to collaboratively create and develop prototype accessible interfaces, using these interfaces to create an improvised electronic music ensemble performance.

To follow up the successful 2015 initiative, a call for participation was put out to invite composers, sound artists, DIY makers, digital musical instrument and interaction designers to engage with the subject of accessible interactive design for musical/sound performance and collaborate with disabled musicians to create accessible digital musical instruments and an improvised ensemble performance in the 2016 project “Performance without Barriers”.

Is June 2016 the six designers met with four pupils from Fleming Fulton and Mitchell House schools, Belfast and a young person from Brain Injury Matters charity to collaborate together and design a customised accessible digital musical instrument.

The designers then spent a further two days working on their customised interface prototypes, which were documented and taken into the schools to present to the pupils to gather feedback and design input.

In September, the pupils and designers came together once again to finalise the prototypes and practice performing music with them; further rehearsals continued into October.

A final workshop took place at SARC on Sunday 27th November and concluded with a showcase performance in collaboration with musicians from Drake Music NI.

Purpose

The aim of this project is to directly impact the lives of disabled people through access to music making and to benefit organisations and individuals working with accessible musical devices with research and knowledge sharing. The design events held in 2015 and in 2016 take an innovative approach to explore challenging and exploring understandings of disability as well as the potential of digital technology to give greater access to music making for disabled musicians.

The Drake Music Project Northern Ireland is continuing to provide concrete examples of what is possible in terms of inclusive music making and accessible digital musical instrument (DMI) design, especially through collaborations such as this one. Through the two inclusive music performances held in 2015 and 2016 student designers and people who have a disability and find it difficult to participate in music making have gained access to participation and the opportunity to perform together, as well as contributing to the wider issue of raising public awareness for inclusive music making and disability arts.

Three-Day design event

Day 1

Tuesday 7th – Thursday 9th June 2016, six designers met five pupils from local schools Fleming Fulton School and Mitchell House School and one young man from a local charity, Brain Injury Matters. The venue was Sonic Arts Research Centre, Queen’s University Belfast.

Day 1 began at 10am. After a round of introductions, the design event first day began with an introduction to The Drake Music Project Northern Ireland and their work in inclusive music making from charity CEO, Dr. Michelle McCormack. After the presentation and introduction to the Performance without Barriers project designers

were paired with a participant performer. Alongside the performer's carers, discussions were conducted by the designer and assisted by Drake Music NI associates to assess the range of motions and abilities that the performers were comfortable with and had particular ability in. Michelle McCormack assisted each group in assessing which abilities each performer had as their particular strength; the project ethos was to work first and foremost from the abilities of each individual.

After one hour of discussions and gesture assessments, which consisted of testing different motions and gestures until a gesture the performer was comfortable with and proficient at was agreed on, the designers and performers then discussed the kind of interfaces they wanted to design and the kind of musical instrument sounds or interfacing options that they would like to implement. The next discussions were for the purposeof eliciting further design instructions and ideas and expectations of the project from the performers.

At 1pm the performers departed and after a break the designers began designs and prototyping the interfaces. The day finished at 5pm with a feedback group discussion session with the designers and facilitators, Brendan McCloskey and Koichi Samuels.

Day 2 and 3 the designers continued to work on their prototypes. By the end of the three days each designer had completed an initial design to work on further and develop into a prototype. These were video documented being demonstrated by the designers. The videos would then be taken to the performers to gather a further round of feedback.

Participant list

Performers:

Meabh Bradley

Bob Pearson

Alice Thompson

Robyn McBride

Hannah Uprichard

Dan McCormack

Designers:

Conor Teahan

Shane Byrne

Ben Holmes

Joe McLaughlin

Brendan McCloskey

Ronan Killough

Groups and Interfaces

After the discussions and dialogue sessions with the performers the designers designed the following interfaces for musical performance to the performer's requirements and requests. They planned to implement the following.

Ben and Hannah

Ben planned to create an interface for Hannah with headswitch for the head rest of her chair as she has powerful and flexible head movement. In addition, he integrated two footswitches and a joystick to the design. Conor made an Ableton Live patch for the interface, which comprehensively covered the instruments desired by Hannah. A Headrest switch would be used to trigger musical notes. LED lights would also be included around the switch so the interface lights up when interacted with. Two foot switches on the footplates of Hannah's wheelchair would be implemented to trigger other notes, or different instruments. Lights would also be implemented at the front to give the audience of the performance visual cues to link gesture to sonic results. A joystick would change the pitch of the instrument Hannah is playing. Finally, a distance sensor to measure the position of Hannah's arm would be included to control the pitch of another note or another instrument. Ben planned to implement this interface using Arduino and Max for Live; the sound generation would come from Ableton Live.

By the end of the three days, due to time constraints, Ben had decided not to include the LED lights on the head rest, the foot switches, and not to include the distance sensor. The reason for this was due to time constraints and over-complexity of the design, he judged it would be difficult to complete to a satisfactory level in this time scale.

Shane and Bob

Shane planned to create an interface using a distance sensor and button interface for Bob utilising the tools that he has grown comfortable with in his day to day life. This consists of a joystick controller and button which he can activate using his head. The joystick controller would control pitch on one axis and modulation of parameters of the synthesised sound on the other axis. The head swithc would turn the sound for the instrument on and off. A notable point about Shane's interface design is that he planned to build his interface using a Galileo board, which could run independently without the need for another computer. The software was designed in C Sound and the final interface would be a standalone digital synthesiser.

At the end of the three days Shane had simplified his design and decided not to include the distance sensor and button interface, but rather focus on the joystick interface and

make that simple but robust and stable. This decision was taken due to time restraints and to focus on a robust simple interface as it would be standalone and so could not be fixed or adjusted easily once completed.

"It's great using [Ableton] Live and stuff because you've got all the synthesis there, all you need is the interface but then you need someone who has a laptop, you need someone who can work Live, probably Arduino and Max/MSP as well. It was disappointing the instrument we built last year "The Bee" only got used then and wasn't taken home by the musician. So the idea the idea now is that's Bob's. He can take that now and do whatever he wants with it, all you gotta do is plug in headphones and plug it into the wall." (Shane Byrne, Sunday 27th November 2016, SARC)

Joe and Robyn

Joe gathered from Robyn that she would like a synthesiser instrument with a piano interface for controlling pitch and triggering sound. He gave her a variety of interaction modes to choose from and they decided together on sliders, buttons and joystick for additional sound manipulation. In addition, she would also like to sing and have the ability to manipulate her voice via sound effects. The interface would be created to be placed on the tray that Robyn uses on her wheelchair with the size made to give her good motion of movement. Joe would implement the interface using Arduino and Max for Live.

By the end of the three days, Joe had encountered technical setbacks and decided to create an interface using sliders, buttons and a joystick and not to include the voice manipulation.

Ronan and Alice

Ronan planned to create large piano key and accelerometer interface for Robyn who wanted to perform with a piano style device. The instrument would consist of a basic force sensitive keyboard and a wrist mounted accelerometer for pitch and effect modulation control. Ronan would also use a LED light strip to visualise the modulation and pitch changes to the sounds that would be generated in Ableton Live. Ronan was implementing the interface using Arduino and Max for Live.

Ronan kept to this design plan.

"Well last year, yeah a lot of musicians had been before, worked with other instruments. Even this year some of them were saying a lot of its iPad based. Obviously that gives a whole lot of flexibility but just a touch screen interface, it's not an easy thing to work. People were complaining about that, but obviously you can just download the app, it's not like you have to go out and buy something expensive. So a lot of the music they do is IPad based and they don't like it because it's not tactile." (Ronan Killough, Sunday 27th November 2016, SARC)

Conor and Dan

Conor planned to create a bespoke MIDI mapping for a Sony Playstation dance pad interface in Ableton Live for Dan. Conor mapped each large foot pad of the interface

to trigger loops and turn on and off effects in Ableton Live. Dan had expressed his love for rap music and that he raps himself, Conor designed an interface that would enable him to perform rap music himself and turn effects on and off of his voice through the microphone, including an autotune effect which would turn his rapping into singing at times.

Conor decided not to include the microphone and effects in the final design due to lack of time.

Brendan and Meabh

Brendan planned to create a fabric pink interface with conductive thread sown into it plus a bowl full of beads and with a contact mic as sensor for Meabh. In their discussions and movement assessment Brendan noticed Meabh's interaction with her trouser leg and that she had a good grasp of the fabric, so Brendan has made designs for both hands which utilise this grasping motion. His interface would be implemented using Arduino and Max for Live, and the sound generation would come from Ableton Live.

Brendan kept to this initial design plan.

"When I first met Meabh she demonstrated a preference and an ability to move her left hand. She could place it in her lap, she could place it in the arm of her chair or she could place it outside of her chair. That suggested something she could put her hand on or in. The first instrument I came up with was a scarf which had capacitive touch sensors in it but that proved to be very unreliable. I noticed the thing she has and uses in her school, it's a desk with a bowl in it. So I brought along a bowl, filled it with beads, put a contact mic on the side and she loved it." (Brendan McCloskey, Sunday 27th November 2016, SARC)

Feedback sessions

Towards the end of June, the documentation videos of the progress of each interface were taken by Brendan and Koichi into the schools and feedback on the design progress was gathered from the performers. The feedback was all positive and on reflection, this phase of the design process was not so useful for input into the designs themselves, but acted as a way to show and keep the performers updated on progress of the devices. Improvements could be made for future projects, such as changing the format of gathering feedback from interviews with the carer workers present to multiple choice questionnaires co-designed with DRAKE tutor and the designer's input.

Second meeting with the designers

In October the designers themselves came with the prototype musical interfaces and tested them with the performers. This stage in the design process was crucial and immediately highlighted design strengths as well as flaws.

Ben's interface could not be used by Hannah at all and the testing session was very short. The problem lay in the lack of sensitivity of the sensors Ben had used, and it could not be changed on the spot. The testing session had to finish earlier than planned, Ben amended the sensitivity of the sensors for the showcase performance

day, this meant the only time for testing the interface would be a short session before the performance.

Shane and Bob's testing session was also cut short. The joystick interface that Shane had made, although fully operational was not robust enough for Bob's use as it did not take into account Bob's forceful and wide range of motion, and after a short while the joystick controller broke off from the body of the instrument and could not be fixed. Like Ben's experience, Shane was shown immediately what he had to change on the interface to make it usable by Bob. Shane commented in an interview that these second meetings were invaluable to get actual physical feedback from the performers, otherwise the designers would just have been guessing:

"I only met Bob once after we initially met. Now, I don't want to assume but I think that after our second meeting that this will suit him. But it would have been nice to just once or twice more, meet him with the finished interface and just see is it waterproof? Is it rock solid? Because that was the issue with the prototype, I thought it was rock-solid but the 3D printed joystick wasn't robust enough, it just broke. So anyway, if I hadn't of had that subsequent meeting, he'd have been getting something that he'd break immediately as it just wasn't designed well enough to his needs." (Shane Byrne, Sunday 27th November 2016, SARC)

Brendan's design flaws were also highlighted, he was using an interface which utilised beads in a bowl, when Meabh tested the interface the beads were ejected out of the bowl, spilling all over the room. He realised he had to modify the design to contain the beads when Meabh made an interaction. Furthermore, the conductive thread sensitivity was not calibrated as sensitive enough to pick up control data from Meabh's interaction, so that also had to be adjusted.

"Yes, there was spread out contact time. The last time was… Both approaches work, I'm not being overly optimistic but both approaches work. If I was asked to choose one I would rather a combination of the two where you spend a long time with the students as we did last year. Then you have a long time to design, then you have a second run of contact time for tweaking and perfecting the instruments. So that would represent a combination of the two approaches from last year. Even if we did have… It seems like we didn't have as much contact time because we had them for one day, then we met them again for an hour or two whereas the last year it was a design challenge… to spend a couple of days." (Brendan McCloskey, Sunday 27th November 2016, SARC)

Ronan's feedback session went well, he had created a robust design and everything was working well. Alice was able to use the device as he had designed it and the LED lights in particular were successfully implemented and approved of by Alice.

"You need a buffer period where you can just go in and fix things up but last year there was just no room for mistakes. So this time we were able to make something much more substantial, but still nothing permanent, it's just not robust enough. But still, some of those guys, they have made something which you could just take out, around schools or whatever, but mine's not, it's not robust enough, it's not really solid . It'll only work if I'm there to make sure no-one does anything to … you know…" (Ronan Killough, Sunday 27th November 2016, SARC)

Conor also had a positive feedback session. Dan liked the interface and was proficient at using it, they had a productive session and Dan was already creating music with the dance pad midi interface.

Showcase performance

After the second meeting with the designers the next time they would meet was the day of the showcase performance, Sunday 27th November 2016. The venue was the Sonic Arts Research Centre, QUB. The schedule for the day was for the designers and performers to reunite in the The Sonic Lab for a final last minute test and calibration of each interface, following this they rehearsed an improvisation performance and then they performed it to a public audience. The event was on a Sunday so regrettably not all the performers could attend. The designers Shane, Conor and Ronan demonstrated their instruments in their performer's stead. Hannah, Robyn and Meabh were able to attend and perform on the day.

In the performance itself, following an introduction by Franziska Schroeder and Brendan McCloskey the group improvised together as an ensemble. Following the performance, the audience was invited to come to the stage and view the instruments as well as speak to the designers and the performers. The overall feedback was that the event and the performance itself was a great success. Below is a selection of detailed feedback and extracts from interviews conducted with designers, performers/families and audience members. For photos, video and audio of the final performance please see this link on the project website.

Feedback from designers and performers:

One designer who joined last year's project was able to develop the concept and learning from last year, to create an instrument that could be used as a standalone device, without requiring it be connected to a computer for its operation. This means that the performer can use the device unassisted. Whereas, with the other instruments, the designer was required to be on hand to assist in the operation of the software and laptop.

"So similarly to the last time we met up with the musicians beforehand and had a conversation about what they wanted from the instrument. Then after that we weren't in teams like we were last year, they were individual projects this year. Instead of having just three days to build we had from June to this point to build. Another thing that was different was that we didn't have to use Ableton, which was great for me because I'm used to working in CSound. So that meant I could embed CSound on a small device inside the pedal. So that now means the pedal doesn't need a laptop to run or anything like that, you just plug it in and it's a standalone. The idea is Bob can just take it away with him". (Shane Byrne, Sunday 27th November 2016, SARC)

Shane appreciated the long period of the project as it allowed him to create a robust and self-contained device, which was not possible at the 2015 event. Ronan in his feedback interview concurred with Shane's point:

"My name's Ronan and I'm one of the designers here, for the second year now. The last one was a lot shorter obviously and this is kind of the expanded version now. It's a lot better this year, a lot more time to go away and build your instrument and a lot

more interaction with the musician you're building for…
"The way it worked this time was a lot better because I just wouldn't have been able to make that in even a week. Just getting stuff together and ordering stuff off eBay, you can't do that without at least a couple of months, time just to do all that. Just to have that flexibility. It could probably have been a lot more robust and I could have put a lot more time into it but it works and it shows off the idea." (Ronan Killough, Sunday 27th November 2016, SARC)

However, Ben felt that the gap of a several months from meeting the performers to the final performance day was too long and led to a loss in momentum.

" I feel like the only problem there was for me was that there was a large gap between the initial session and the end session. The difficulty with that is that it's hard to keep yourself focused on a project for that amount of time when you don't have any external stimulus. It was just me trying to plug in and keep going remembering we had this deadline at the end. Whereas if we had them closer together… Maybe if we had a few more meetings with the musician then maybe it could have been more of an intricate design and I could keep focused on it." (Ben Homes, Sunday 27th November 2016, SARC)

Conor saw a positive through the time constraint in that the pressure aided his process of planning and creation.

"There was at the very beginning a time pressure to come up with something and get something working initially. But in some ways that kind of helped because there was a deadline ticking away you had to reach." (Conor Teahan, Sunday 27th November 2016, SARC)

Ben also shared that the opportunity had expanded his vision of what kind of projects he could apply his skills and expertise to.

"I've gotten loads out of it. It's something I've never considered before: making instruments for people with disabilities. You're just so used to the typical controllers like keyboards so it was a massive opportunity to take a new perspective on how to create an interface. Maybe that's obvious haha." (Ben Homes, Sunday 27th November 2016, SARC)

Ronan also shared the positive benefits he personally gained from engaging in the project:

"Well I really enjoy building stuff like that. It's something I do as a hobby anyway and it's just a sort of fun project. Last year, especially, to see how the musicians enjoyed working with the instruments. It's really fulfilling to see how it actually does make a difference." (Ronan Killough, Sunday 27th November 2016, SARC)

Conor also found that he had to develop skills in communication for this project to be able to apply and transmit his expertise.

"Yeah, obviously, working on my own I know what all the things do and I don't have to explain it to anybody. But it's different when you're building an instrument for someone

and you have to listen to what they want and it has to be easy to explain to them. It can't be too complex on the user side. So that's something I had to learn." (Conor Teahan, Sunday 27th November 2016, SARC)

Meabh and her parents

In an interview Meabh's mother, Marian Brabley, conveys how she feels the music making benefits Meabh in terms of both her physical body and movement, for self-expression and for creativity.

Marian: Meabh I think Aonghus would be interested in this. Do you see the way you're non-verbal and when someone gives you the chance to have a voice? Does it help with how you feel in your body?
Meabh: Yes.
Marian: Do you find that when you use music like this that you're able to express yourself?
Meabh: Yes.
…
" Well you see, there's nothing for our children they can't just go to a violin lesson or something so all of a sudden the doors are all closed. Then you have this group called DRAKE coming in saying "We're doing music without boundaries" and nobody ever says that to us. Everything with our young people is about boundaries and nobody has ever approached our children and said: "How are you? What are you going to do? How will we create music with that?". It's amazing. The sound made was fantastic. Meabh said she loved creating sound and nobody's ever asked her to do that before. She isn't able to speak but it's another way that she can communicate. What I noticed about Meabh during the performance is that a lot of Meabh's body can… we learned certain types of sound really help her body relax and be more in control. I noticed how her whole body was really relaxed… and you really enjoyed that didn't you? [Meabh enthusiastically agrees]. I was fascinated by that."
(Marian Bradley, Sunday 27th November 2016, SARC)

Meabh's father, Vincent Bradley, emphasises how the project helped him challenge his own expectations of his daughter's capabilities.

" Our daughter's Meabh and… I didn't know what I was coming to. I only knew that we had got in touch with this DRAKE project and we just simply thought: "if Meadbh wants to do this we'll oblige her", but we didn't know what we were coming to. I was very impressed anyway. Although, in many ways, I'm Meadbh's father but I probably see more her limitations than her mother. Her mother would see possibilities. But sometimes I'm a bit more "God, she'll not be able to do that, what would she do for the musical performance" I'm thinking. Whereas Marianne is the opposite. But I've just come here and seen Meadbh doing the percussion, and watching her and they weren't random acts. Now it might take her ten seconds but she knows what she wants to do: to hit the ball of beads and I could see her building up and making a decision. Sometimes I think her acts are random but here I could see she was doing what she wanted to do. I was very impressed by that if it makes sense to you…"
"You learn so much from your children anyway and this is bringing us into another world. It's another world I wouldn't have had any reason to engage with only for Meadbh. And the whole thing of Meadbh's disability has actually opened so many

doors to us, in a weird way that wouldn't have been open to us except for her."
"…we were told about this event happening on a Sunday and I first thought… on the two other days the project was on she came with the care workers from the school and I was thinking "Well surely, will they be here? Do we need them here? Do we need to be here?" and then we realized "The care workers, they work Monday to Friday, teachers, they work Monday to Friday" but you know it happened without them which is brilliant. We were wondering would the people here know how to engage with Meadbh because it takes a bit of getting used to… and they managed the best.
(Vincent Bradley, Sunday 27th November 2016, SARC)

Further, he was impressed with the designers' engagement, attitude and behaviour throughout the event in relation to some of the performer's disabilities.

"Well put it this way, they're not afraid of her and a lot of people are afraid of approaching children with disability. they've obviously done their research and they'd done their one or two meetings and they weren't afraid and that's a big thing…"
"Yeah, well you're gonna engage with it and you're open to possibilities. But we see a lot of times, people are afraid of disabilities and sometimes even family members don't know how to engage, so they just don't engage."
(Vincent Bradley, Sunday 27th November 2016, SARC)

Audience feedback

Audience feedback overall was positive. Audience members were either families and carers of the performers or musicians acclimatised to performances utilising music technology and computers.

One audience member noticed that Shane's device was standalone and would not require a computer and someone supporting the performer to operate it.

"It was quite interesting. I used to actually work with people with disabilities, people with mental issues and I think, especially, the man who made the little joystick, he was saying it doesn't need an interface and can be standalone for the gents wheelchair which I found to be quite interesting. Other pieces maybe looked like they had to have someone else supervising it, or being a part of it but then it's to do with the individuals needs too."
(Dawn, Sunday 27th November 2016, SARC)

Another audience member noted how they could distinguish between the devices being performed with in the performance.

"Yeah, definitely. Each instrument was quite distinct and easily distinguished. I didn't realize they only had two hours to rehearse. I was quite impressed, I know it's an ongoing project but I was quite impressed with that. And also the improv thing was class, maybe even better."
(Eric, Sunday 27th November 2016, SARC)

Two other audience members noted how they could discern in what ways the designers had customised their devices to the performer's abilities.

" Of tonight? Of now? It was very interesting to see how they reacted. To see how the audience react to what they are seeing and hearing. We are all trying to get some different interface to play, and we all have different skills and abilities. It's interesting to see how the designers developed the interface and it was very interesting to see their reaction. They were always smiling and reacting. It was about communication, like in the other ensembles we play in."
(Suzie, Sunday 27th November 2016, SARC)

"The concert was absolutely, totally, something new. That is the first point. The other point after this was the devices were really well tailored to each person and that was particularly evident during the concert because everyone used all the possibilities of the interface. It was an insight into the development of the interface and the design of the interface. That was well demonstrated I think."
(Francesco, Sunday 27th November 2016, SARC)

Conclusion

The longer scale six-month 2016 design project built on the experience of the 2015 three-day event. On the whole the designers were able to create more robust designs with a greater level of customisation to the performer's specific abilities. Furthermore, the second and third stages of feedback from the performers in some cases allowed for serious design flaws to be revealed and crucial modifications to be made. Some participants expressed that the length of this project did have a negative impact on the designer's feeling of momentum within the project, and regrettably some of the performers could not attend the final showcase event. A notable development came from Shane Byrne's design who decided to create a self-contained, standalone device for his performer Bob Pearson. This interface did not require specialist assistance to operate. Shane's design could be taken away from the event by Bob or the school, and utilised without Shane having to be present. To do this he moved away from using an Ardunio board and sensors operating an with Ableton Live project, instead opting for a Galileo board and joystick interface.

From the feedback gathered from designers, audience and performers, all involved had a valuable and meaningful experience. Some designers expressed they had gained new ideas of ways in which they could utilise their skills and expertise, and performers and their families expressed how the project had helped them to expand the performer's capacities physically and engage in an activity they had never done, or even had the possibility of engaging in before.

Looking to the future, the project can be developed and honed further in multiple ways. From the feedback we received a longer scale project is important to allow for several rounds of feedback and input into the design from the performers themselves, however a better way for gathering feedback from the performers is necessary. Collecting feedback on the interfaces through dialogue based interviews was difficult this time and needs to be developed for those who are non-verbal or have difficulty expressing themselves verbally. One way to do this could be to create a questionnaire detailing options of design preferences and options for parameters that could be adjusted on the interface to determine the performer's level of satisfaction and preference for different aspects of the design. Another aspect that can be taken forward from this 2016 event is utilising Galileo or similar self-contained computer boards to produce standalone instruments. This would allow for further independence

for the performers and also to allow them to return home or to their schools with the devices that have been developed for them.

It is hoped that SARC and DMNI can continue this important collaboration. As this report has shown it impacts those involved in multifaceted ways and as the project becomes more focussed towards sustainable outputs that extend beyond the project period, the work that has started here has the potential to have a great positive impact on the lives of disabled people through inclusive music making.