Using iPads in Participatory Music-Making

Part One: Research

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1. Introduction

Since the invention and release of Apple's iPad in 2010 with its touchscreen and swiping technology, there has been an exponential explosion in its use across a huge range of contexts. From the military to hospitals to schools, this elegant piece of 21st century technology has become ubiquitous, and the design and implementation of apps has become one of the fastest growing industries of recent years. Schools have been buying and providing students with iPads on a wide scale and in particular the world of Special Education has embraced their use, where the qualities of the interface are seen as offering great accessibility for those for whom either conventional computers or more traditional educational tools are difficult to engage with.

The aim of this research has been to explore the use of iPad (and other tablets) and their attendant apps in the field of participatory music making with especially young people living their lives in challenging circumstances.

We wanted to see how people are using iPads, in what contexts, and to create an in-depth overview of the most popular apps – what they do and how we might be able to use them to increase the options for meaningful musical interactions. I am also seeking to look at some practical challenges and other aspects of their use, as well as to ask some questions about how meaningful, deep or sustainable iPads are as genuine musical instruments and tools.

Participatory music-making

I describe part of my own practice as Community Music (CM), a field characterised by informal, often short-ish term interventions based on a philosophy that engaging in meaningful music making has a great benefit for everyone in the joy that music brings to people's lives, but also that, especially for those living their lives in Challenging Circumstances (CC), taking part can bring many other benefits around communication, confidence, transferable learning, physical and psychological therapy, teamwork, health, community cohesion as well as creative expression.

Traditionally the field of Music Education (ME) has been more concerned with the acquisition of specific skills and understanding, including the learning of instruments, and focussed mostly on musical learning and some creative expression, rather than what might be called extra-musical learning and development.

Music Therapy (MT) has been a third strand of musical interaction where the main aim is around improving the mental and physical wellbeing of a client through one-to-one musical communication, listening and sharing.

However the last few years have seen a sea change in Music Education, Community Music and Music Therapy where the concerns and approaches of all three fields have come much closer together. For instance for those of us in the CM field, we have both formalised and extended our practice to include both the teaching of skills as well as a focus on the specific and measurable health benefits of music making. In ME, there has been an enormous restructuring which has challenged teachers and providers to engage with a much wider base of students in different contexts and definitely including young people who are not pursuing academic or professional achievement through music but for whom music making might have other benefits. Similarly MT has been through large changes, away from a Western Classical music based "treatment " model to a more participatory one where the client actively engages and shares in the music making experience rather than more passively " experiences " a music environment.

So, in this study, I would include the breadth of these disciplines within the term Participatory Music Making (PMM) – the fundamental being that it is about people being able to, as much as possible, actively engage in the creation, performance or other experiencing of music, what Christopher Small describes as 'musicking'.

Instruments, technology and iPads

The breadth of these practices includes playing, performing, singing, composing, programming, recording, interacting, improvising, listening and responding. The physical tools have included all conventional instruments from a wide range of cultures alongside some invented instruments and, increasingly over recent years, music technology ranging from computers to drum machines, samplers, synths, whilst the mechanics of interacting with technology have developed to include controllers, drum pads and more esoteric interfaces like Soundbeam and gaming technology. We have been able to use keyboard skills, hit pads, slide controller knobs and to some extent move around in space to generate and control sound. These are all ways and attempts to play electronically generated sounds in expressive and creative ways comparable to playing conventional instruments. Many however are expensive, complicated, potentially intimidating and very specific in application.

The invention of the iPad and its swiping and touching gestures brought the potential for a new and different way of playing, accompanied as it is by the sizeable visual screen, relatively enormous processing power and memory, user-friendly interfacing, light weight and portability as well as the relative open nature of the iOS format that makes it reasonably easy for independent developers to create their own apps.

iPads are now seen by many practitioners in the PMM world as a crucial part of their toolkit and often amongst the most useful parts as the variety of apps and the different ways they enable musical interactions are so wide that finding an app to suit a particular participant's skills, abilities or interests is a realistic possibility.

This research is a response to this fast changing landscape and seeks to analyse the use of iPads in our work to establish how valuable practitioners find them, what are the most useful apps for what purposes and an idea of how people are making use of this technology in their work.

Apps

There are literally thousands of music based apps available, with new players coming into the market almost daily. They range from the very basic to highly esoteric and complex. Their relatively low cost means that it is possible to carry a toolkit of numerous apps with different functions and interfaces that could appeal to a wide range of interests and abilities. The attached review highlights some of the leading apps in the marketplace.

The apps I have researched and share in the accompanying review cover a wide variety of musical functions and I have labelled them according to what I see as a primary function. Most of them are based on making use of the touchscreen, large visual interface and computing power but use these in very different ways – sometimes turning the iPad into a physical musical instrument and sometimes using it more as a secondary resource, for example Tuner or Score reader. Some might have their obvious uses in participatory music with young people or might seem more suited to professional performing uses. However the innovative nature of their design and the innovative nature of music leaders and their clients could well mean that people can find uses for surprising apps in different contexts. This list is far from exhaustive but contains most of those used regularly by practitioners and a few I have come across but not experienced.

I have grouped and analysed apps according to their function rather than according to suitability for a particular client group though comments and observations may well refer to their suitability with certain clients. These functions I have listed as follows:

Producing and performing

- **Beat-making** – this refers to composing/programming particularly around urban and contemporary musical styles, mostly focussing on short sections, loops or grooves.

- **Composing/sequencing** – composing in a wide range of styles and creating longer sequences and more complex arrangements.

- **Performing** – apps that incorporate virtual instruments in a way designed primarily for playing and performing.

- **Audio recording/sampling** - apps that allow recording and sampling and enable looping or other forms of manipulation.

- **Engagement** – There are lots of apps that are exciting and inspiring to try and can be useful for engaging young people in deeper music making. They could be seen as icebreakers or 'first step' tools, though some will have deeper functions too.

- **DJing** – apps that emulate mixing on decks

Mood and sensory

- **Audio/visual** – apps that specialise in combining visual and audio creation.

- **Gesture** – apps that do not rely on touching the screen but use the camera to convert physical gestures into musical information.

- **Mood** – apps that are good for establishing a mood, for instance calming or relaxing. Often these use 'ambient' type sounds and/or soothing visuals.

- **Esoteric or unusual** – ones that don't fit under other headings

Scoring and music teaching

- **Music teaching** – apps that may be designed for learning to read music, understand harmony, teach specific techniques.

- **Utility** – including tuners and apps that perform ancillary actions rather than making music per se.

2. Methodology

I used a number of networks to which I am connected, including through the Youth Music Network, Drake Music, Sound Connections and Rhythmix, as well as contacting London-based Music Education Hubs, community music organisations and a large number of freelance music leaders. I sent out a basic questionnaire to all of these, following up with more detailed conversations with practitioners, as well as several observations of workshops featuring iPads. Respondents were working in a variety of contexts from Mainstream Schools, Pupil Referral Units, Special Schools, Saturday Music Schools, Hospitals, Informal small group projects and Therapeutic contexts. I have named several people whose comments inform aspects of the research but numerous others contributed useful insights into their practice.

Additionally I engaged in my own personal R & D using a wide variety of Apps in my own practice with young people in challenging circumstances, especially in PRUs, Special Schools and with young people with autism, as well as physical and learning disabilities. I also undertook studio-based research exploring the uses and usability of different apps and ancillary equipment.

I spoke to and observed music leaders leading, composing and playing with groups of 20 primary-aged children, varying sizes of groups of young people with learning and physical disabilities, small groups of young people outside mainstream education, one-to-ones and a variety of other contexts.

3. Findings and responses

A clear consensus emerged at once from all respondents that iPads were making a huge contribution to people's work in a wide variety of contexts. I received responses and/or observed practice is a range of contexts – whole class tuition in 'mainstream' education, group and individual work in special education settings, small group and individual work with young people in PRUs and other Challenging Circumstances contexts.

Pretty much everyone who responded is finding iPads to be an essential educational and creative tool enabling teaching of music, live performance and composition "circumventing restrictions of instruments and also students potential motor skill challenges". (Kelli Jo Peters).

The portability of iPads, speedy set-up and flexibility relative to other music technology was highlighted, as was the ability to "ensure that both genders were engaged and achieving in an area that is traditionally male". (Julie Sharpe, Newham Music Trust).

The speed of set-up was mentioned by Gawain Hewitt as well as the toughness and difficulty of destruction. The speed of getting musical results yet ability to work deeply too was mentioned by several respondents – how quickly young people understand the way of working and also how they tend to stay focused for longer periods than with other music-making approaches.

"Introducing young people to the sounds of a variety of instruments and potentially inspiring them to move from virtual to physical engagement with those instruments" was described as a major benefit by Carol Churchill.

However it would be wrong to say that people were uncritical of iPads in the classroom. The "risk of young people focussing inwardly on the screen and not communicating outside with other humans "was raised by Ali Harmer. This was

particularly of concern in work with young people on the autistic spectrum where communication and collaboration is often an important aim of a music project.

The attractiveness of the interface – bright lights, shiny technology was definitely seen as something that drew young people towards trying them out, and the increasing familiarity of iPads to many young people removed any fear of being intimidated.

4. General conclusions

iPad music-making is probably the single most innovative, genuinely new way of making music to emerge in a long time. It can combine much of the strength and power of computer-based music making with some of the expressivity and physical engagement of conventinal musical instruments. Portability and low cost of a wide range of apps were also mentioned as great assets.

For me, I think it can genuinely be called a musical instrument as it allows a variety of physical ways of playing and controlling sounds expressively alongside huge pallets of sonic possibilities. It offers a lot of sonic reward and feedback but not the physical feedback that many conventional instruments offer though this may not be of relevance to some of the groups we work with and is certainly a decreasing element of contemporary music-making as various technologies become embedded in performance.

The enormous breadth of apps that work in completely different ways means that we can have at our finger tips a huge range of tools for self-expression and for enabling self-expression for the people we work with. If someone is drawn to a strongly visual way of interacting with sound then there are apps to do that. Or if someone can only make small physical movements, there are apps that may enable their engagement with music. If someone has a desire to make urban beats quickly or engage in a sustained way with manipulating sound then other apps will perform these functions too.

Intentionality, playability, independence and control

Whilst touching an iPad and generating some kind of sound can be immediately rewarding and engaging at an entry point it is really important that participants are clearly aware of the results of their movements and can start to exert some meaningful control. Just providing iPads and apps isn't enough – we need to develop methodologies for encouraging development and to ensure the connection between finger and ear is understood and learned otherwise there is a danger that iPads become merely a sonic electronic babysitter rather than what they can potentially be, a game changing way of making music. Encouraging participants to play in

different ways, to stop, start, listen and explore are as essential on an iPad as on any other instrument. One of the great strengths however is that on the same instrument one can have their first musical interaction but also work creatively with meaning and depth.

Participatory Music Making on iPads is a fairly new and fast evolving practice and it will be interesting to see how it evolves. A variety of issues have started to emerge: challenges of group play; avoiding young people especially those with autism to become more cut-off from their peers by disappearing into the iPad world; intentionality/ cause and effect; and others. A few respondents expressed frustration at the absence of real pressure sensitivity, for example to control dynamics in playing, as well as the absence of genuine vibrational (Haptic) feedback. Several apps including Samplr and Animoog have attempted to offer dynamic control by sliding a finger higher up the screen and this is definitely a technique that can be learned, made pretty intuitive and become a performance technique in its own right. The use of vibrating speakers might also assist those seeking a vibrational response as offered by many, but not all conventional instruments.

These raise the very interesting question as to whether we want our iPads to replicate conventional instruments or to do something completely different – I think many of us are looking for both but it will be interesting to see how this develops over the next few years.

A note on other platforms

I asked practitioners for their views and experiences of using other tablets not using Apple iOS. There was an almost unanimous view that these were not worth pursuing currently despite the lower cost of the hardware as there were very few workable apps available and because of excessive latency (delay between playing and sound coming out). It is to be noted that some app developers are starting to offer dual platform apps and this situation may change soon.

Final thoughts: the future of iPad music-making

There is no doubt that iPad music-making is here to stay and in many ways has very quickly come of age. The genius of the device is in its flexibility for users and also of iOS for app developers. Several people alluded to Apple's tendency to change operating systems and enforce upgrades on users which could make great apps suddenly obsolete or force non-specialists in schools to seek technical support to maintain the currency of their apps and hardware. It's a pity that Android and other platforms remain largely irrelevant as this reinforces Apple's monopoly.

There are features and apps that we would all like to see, for example a truly useable, simple, stable and expressive motion sensor app using the camera, a better

and universal way of moving audio and other files around between apps, greater volume and/or no latency Bluetooth, Bluetooth to actually work reliably, easier syncing across a number of iPads. Other respondents have added to the wish list pressure sensitive playing surface, physical vibrational response and an iPad version of the wonderful Soundplant sampler. A call for aspirational Apps generated a very interesting debate as to whether iPad music making should be replicating conventional instruments or indeed focussing on new ways of generating, controlling and interacting with sound.

Luckily there are a number of organisations and individuals starting to conduct field based research into designing Apps for specific client groups and following this research I hope to be able to input some of this learning into those processes.