Primary Music Toolkit: Chapter 5

Using technology in primary music education

Introduction

Technologies are part of our everyday life. From capturing and sharing our everyday lives through images, videos, text and emoji’s on social media, to playing games with strangers across the world, we live in an age of instant information, communication and connectivity. The portability and availability of technologies offer exciting possibilities for music education for children of all ages to make, create, listen to, mix, remix and capture music – and it is clear that many already do this in their own time. In just a few years mobile technologies in particular have developed exponentially, becoming part of children’s everyday lives, even from a very young age, and becoming increasingly common in classrooms. This part of the toolkit does not seek to offer a comprehensive list of possible technologies in primary music education – indeed it would be out of date almost before it is published! Instead, it brings together an overview of types of technologies and signposts ways, resources and ideas for using these as part of an inspiring music education.

Should we use technologies?

A resounding response to this is **YES we should use technologies in music education!** They have so much potential to contribute positively, yet what we should think about is how we maximise the use of technologies in ways that are meaningful, relevant and pedagogically sound. This takes careful planning, and teachers should be mindful of the following:

> 'it is not whether technology is used (or not) which makes the difference, but how well the technology is used to support teaching and learning. There is no doubt that technology engages and motivates young people. However this benefit is only an advantage for learning if the activity is effectively aligned with what is to be learned. It is therefore the pedagogy of the application of technology in the classroom which is important: the **how** rather than the **what**.'

Higgins, Xiao and Katsipataki (2012:3)¹

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Whilst it is the case that many young people have access to the internet and to technologies in the home, we cannot and should not assume that this is universal and therefore make sure that we consider issues around equality of access. We should also consider regulated use of mobile technologies such as mobile phones with older primary pupils – the power of the technology they own is immense and the possibilities are great, but this needs careful management.

Music technology is integral to England’s National Plan for Music Education (DfE, 2011) and whilst some people were critical of music technology being included as an Annex rather than part of the main document, we should acknowledge that the Appendix is actually six pages in length and lays out many important points about the use of technology, including the following statement:

‘Technology plays an important role in supporting, extending and enhancing the teaching of music. It can help connect communities in ways that rely less on location; be used to inspire, motivate and stretch pupils, including those reluctant to engage with music; help extend musical experiences; and help children with additional needs to further engage in music making. It complements other music teaching, while encouraging wider communication and collaboration with other pupils.’

(DfE, 2011: 36)

It is not a case of exclusively using just musical instruments, voices or technologies – it is a case of exploiting the possibilities of combining many ways tools whenever appropriate and using them separately at other times. As such this whole section of the toolkit should be read in conjunction with the other sections and is only separated here for ease of reference.

**Technologies useful in music education**

Within the classroom, many generic technologies are already in use – for example, interactive whiteboards, online sources, cameras, audio and video recording devices – even technologies such as video-based professional development tools to capture our lessons and allow us to watch them back and critique our own teaching! Table 5.1 offers an overview of the range of technologies available for use in the primary classroom.

This list has been compiled by Duncan Mackrill, Senior Lecturer in Music Education from the University of Sussex and is published in *Teaching Primary Music* (Daubney, 2017: 56-57).

<table>
<thead>
<tr>
<th>Technology</th>
<th>Examples</th>
<th>Uses include</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic keyboards</td>
<td>Portable keyboards</td>
<td>Selecting from a wide range of instrumental sounds; use a chord and/or rhythmic backing; listen via headphones or out loud</td>
</tr>
<tr>
<td>MP3 music files</td>
<td>iPod or other MP3 player</td>
<td>Playing songs or backing tracks from a physical MP3 player to support whole-class singing, rhythm or ensemble work</td>
</tr>
<tr>
<td></td>
<td>Online/’cloud’ music libraries – YouTube, Spotify or Google Play</td>
<td>Or accessing (via an internet connection) music from a</td>
</tr>
</tbody>
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*Primary Music Toolkit*

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<table>
<thead>
<tr>
<th>Recording devices</th>
<th>Tablet, mobile phone, portable digital video and/or audio recorder</th>
<th>Audio/video recording and playback of pupil work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable audio recording</td>
<td>Tascam DR or Roland R portable recorders</td>
<td>Making live stereo recordings in the classroom or in other locations</td>
</tr>
<tr>
<td>Video recording</td>
<td>Tablet, camcorder, Zoom, mobile phone</td>
<td>Videoing work in progress or final performances to build up a portfolio of pupil work; projecting on the board; sharing with pupils/parents via school network</td>
</tr>
<tr>
<td>Audio recording</td>
<td>Audacity (free), Wavelab</td>
<td>Recording sounds, editing (including pitch) and adding effects</td>
</tr>
<tr>
<td>ePortfolio</td>
<td>School or web-hosted Learning Platform, e.g. 2Build a profile, Edmodo</td>
<td>Pupils creating and accessing their own or a class portfolio, including audio and/or video of their work in music over time; and sharing these with parents/carers</td>
</tr>
<tr>
<td>Online music videos and ‘how to’ tutorials</td>
<td>YouTube, Ultimate Guitar</td>
<td>Teaching yourself using ‘how to’ tutorials and accessing a huge collection of online music videos, e.g. to support singing</td>
</tr>
</tbody>
</table>

For the more confident with music or technology:

<table>
<thead>
<tr>
<th>Tablet or smartphone</th>
<th>Tablets, e.g. iPad, Galaxy, Nexus, Xperia Most smartphones (iOS or Android); music apps, e.g. GarageBand, PocketBand, Nodebeat, Bebot, or virtual instruments and tools, such as Alchemy synth, metronome, guitar tuner</th>
<th>Arranging pre-created loops to make a backing; creating beats or loops using drag and drop; improvising over simple loops or rhythms/chords; using easy-to-play virtual instruments or tools as teacher tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loop-based sequencer</td>
<td>GarageBand, FL Studio, Acid, Music Maker</td>
<td>Auditioning and selecting ready-made loops from a pool (drag and drop) to build up a composition; ability (in some programs) to edit loops/instrumentation and record new tracks</td>
</tr>
<tr>
<td>Cloud-based software</td>
<td>Soundation, O-</td>
<td>Online music programs for pupils to use both at home and school, to</td>
</tr>
</tbody>
</table>

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programs | Generator | compose and create their own music
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Live coding | Sonic Pi – software instrument for Raspberry Pi, Mac OS, Windows or Linux | Simple music-specific application for use in music to create loops and compositions easily, or for use in computing lessons

**For experienced users:**

| Sequenter | Cubase, Logic, Sonar, Studio One, Mixcraft | Making MIDI or audio backings as a teacher tool to support instrumental, rhythm or singing work in the classroom; using virtual instruments and effects to playback sounds

| Score and notation software | Sibelius, Finale, MuseScore | Producing scores and parts with the ability to play these back

**Table 5.1** A broad overview of the range of technologies available and indications of their potential uses in relation to musical learning in the primary classroom

You may find that your school has blocked the use of some potential online resources and sources; it is definitely worth asking the network administrator to allow teacher access as the internet has a wealth of music and musical learning opportunities available from all around the world.

**Tablets**

Tablets are increasingly popular in primary classrooms, with many schools investing in a whole-class set that can be booked for use across year groups and subjects. Even with only one or two tablets available for use, there is a lot you can do. Some examples are given in table 5.2 (with thanks to Duncan Mackrill and published in Teaching Primary Music, page 57).

<table>
<thead>
<tr>
<th>Concept/use</th>
<th>Possible uses</th>
</tr>
</thead>
</table>
| Provides a computer in our hand – sound, screen, microphone, etc. are all in one portable unit | Teachers or pupils can easily make video or audio recordings of completed work or their work in progress; this can then be replayed via a projector for the whole class, or on the tablet itself in a future lesson to remind pupils of their previous work (useful for on-going composing or performing activities)

Key evidence of pupil work can be saved and collated and notes made on pupils ‘on the hoof’ in the class; this can also be saved to a pupil or class ePortfolio, replayed, shared and accessed at a later date

| Portability | Allows easy internet access anywhere with a WiFi connection, so tablets can be used in different locations as a recording device or to support musicians as they work, e.g. in displaying lyrics, playing backings or simple loops to support improvising or performance work

| Support tool for teachers | Enables teachers to play MP3 files, play backings, set quizzes, etc. and create their own loops or backings to support singing or instrumental work, e.g. using GarageBand (iOS) or |
PocketBand (Android)
The tablet can be easily connected to a data projector to model, share work or present ideas to pupils

### Table 5.2 Benefits of using tablets for musical learning and assessment

There are so many Applications (Apps) available for almost any conceivable use – there are bound to be some you would find beneficial in your classroom. A list of [useful Apps in primary music education](#) has been put together by Kelly-Jo Peters at Great Oaks Special School. This excellent resource also gives suggestions of how the Apps might be used in Key Stage 1 and special educational needs settings. The list is fairly extensive and, whilst written for a SEN audience, has a much wider reach and applicability in mainstream schools and with both older and younger children.

If you have tablets for use in your classroom, take a look at some of the amazing and powerful technologies available, many of which are free. A very versatile and often pre-loaded iOS app on technologies such as the iPhone and iPad is ‘GarageBand’. It is likely that many children will already have used this outside of the classroom. Amongst other things, it is useful as a loop-based software and for recording – the downloadable interactive book [GarageBand for Schools](#) by Phil Heeley and David Ashworth is a good starting place for taking teachers through a step-by-step guide to creating a song.

### Getting started – ideas for using technologies in primary music education

Here are some ideas for how to start to incorporate technology in music lessons. This list is by no means exhaustive and there is a degree of overlap between the categorising of the ideas described.

#### Creating

There are many possibilities for children to make creative choices when using music technology. Some of the most simple applications available online and for tablets allow for ‘drag and drop’ of loops into what effectively looks like a grid into which sounds are placed. Garage Band (pre-installed on many Apple devices), Soundation (for PC) and Super Duper Music Looper (for PC and aimed at younger children) all include this type of looping application. Even if you only have one laptop or desktop computer in the classroom, your pupils may be able to use this kind of technology. Over time, you need to think about ways to encourage children to make critical and personal judgements about the loops they choose and the order of these to avoid a complete ‘paint by numbers’ approach to composing.

There are other musical applications online that work on a similar basis of creating simple loops. For example, the ToneMatrix is a pentatonic sequencer that, instead of having loops pre-recorded, is effectively a blank grid into which notes are added to create your own loops using notes from the pentatonic scale. Kelly-Jo Peters’ list includes many applications, which encourage this kind of work. In both of the above examples, the loop created could form the melodic / harmonic basis for a more extended piece of work, for example creating a song and using this as a backing track.2

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2 Erin’s song idea and Alain Garage Band Sequence from Westbrook Old Park Primary School, Feb 2016, demonstrate this. [http://www.westbrookoldhall.co.uk/music/Primary-Music-Toolkit](http://www.westbrookoldhall.co.uk/music/Primary-Music-Toolkit)

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Examples of work using Hammerhead Rhythm Station

Other examples of ways to create music using technology include the input of electronic or acoustic instruments or sounds. **Audacity** (free to download in many languages for Windows and Mac) has excellent functionality for this – it allows multiple tracks (layers) to be recorded and edited – pupils could make and then adapt sounds using the functions in Audacity. Files can also be imported into **Audacity** and then used or adapted. It can do things such as change the key of the music, so can even be useful if you want to transpose backing tracks! Read about some simple ideas for using Audacity, Wave Pad and Music Mike Create.

Performing

It is becoming more and more common for music technology to be included in mainstream performance, for example through the use of loops, backing tracks and instruments (included adaptive instruments). There are also examples online of iPad orchestras (e.g. - Pachelbel’s Canon performed by Wandina Primary School; One Day Like This performed by year 6 pupils at Henwick Primary School).

Music technologies are instruments in their own right and enable music making to be accessible and inclusive. In 2014 at a large-scale singing event in Brighton, 1,400 primary aged children sang together, with children from local special schools also adding the narrative using ‘Big Mack switches’ to a poignant piece about life in the trenches during the First World War. For more information on assistive technologies, take a look at Drake Music.

Simple recording

Laptops, tablets and mobile phones normally have an in-built microphone for recording. It is literally just a question of capturing the sound in the environment – it could be children singing or talking, playing instruments etc. As you get more confident you may want to think about plugging a microphone in. Children are capable of taking responsibility for capturing the recordings. It is always really interesting for children to hear their own work – even something as simple as their own voice when speaking or singing. When listening back, children are likely to make spontaneous comments – audio (and video) recordings are also great ways to capture work in progress, providing a useful way for children to critically engage with their own sound, commenting on it, working out what might need improving and the next steps to this, as well as providing a sound-based record of work from one week to the next. It is lovely for pupils to revisit earlier recordings at a later date too to hear musical progress and also remember the work.

If using a laptop, you could use the built-in recorder or download a programme such as Audacity – this is free and available in many languages. Audacity also has very sophisticated (yet straightforward to use) functionality to manipulate sounds. Extensive online tutorials (aimed at adults rather than children) are available - you will benefit from being familiar with this (and any other) technology before using it with pupils.

Sharing recordings

It is easy to share recordings via, for example, the school website, blog or virtual learning environment. The most important things are that it is secure, easy and...
quick to use. **Edmodo** is a free educational safe learning space where students can collaborate and work can be uploaded, shared and commented on. Many schools set up one page per class to upload recordings and other things of interest. Edmodo requires students (and parents) to log in and effectively forms a continual record of work. Some examples of work shared by primary school music teachers can be seen in the following places:

**Westbrook Old Hall Primary School**  
**Down’s Junior School Music**  
**St Teresa’s RC Primary School**

**Summary**

Whilst the section on music technologies has been separated within this toolkit, it has immense potential for use throughout music education, not only as a stand-alone endeavour but more importantly to support, enhance and promote musical learning **per se**. It is important for teachers to become familiar with the technologies they might consider using, perhaps using it themselves first to explore sound and music and have fun getting to grips with particular technologies. Fundamentally, teachers need to think about why they are using technology and whether the ways it is used support musical learning. Technology is not a bolt-on but is integral to **supporting, enhancing and even being** the vehicle for musical learning and has immense potential for inspiring use right across the curriculum.

**Resources**

- [List of Apps and their potential uses in KS1](#) – from Kelly-Jo Peter at Great Oaks Primary School
- [Annex on music technology in the National Plan for Music Education](#)
- [Drake Music](#) – an organisation working across music, disability and technology
- Sawdon, J. (no date) Tees Valley Music Service. [Outline of the latest developments in music technology for schools](#).
- Wheway, D. *Music Technology in the early years and primary schools*. This offers a brief overview of essential hardware and software.
- [List of useful apps and software from University of Sussex](#)
- Bristol Plays Music – [link to primary curriculum where there are many opportunities to incorporate technologies](#)
- Sing Up – [Taking singing further with technology](#) – an article by David Ashworth
- Charanga – [the Musical School](#) – a cloud-based subscription music scheme for the primary music curriculum, in which the use of music technologies in embedded.