The 21st century teacher: music

Using technology to enhance music teaching
This publication offers insight into how technology can be used by teachers of music, highlighting opportunities to extend subject pedagogy and ICT skills. Other publications in the series offer the opportunity to see how technology is used in other subjects and the cross-fertilisation of ideas and practice.
Using technology to enhance music teaching

As technology becomes a greater part of everyday life, it is only natural that it becomes a central and essential part of 21st century learning. Learners already engage extensively with technology and they expect it to be used in school.

How do teachers benefit from the integration of technology into all aspects of their role and enhance the learning experience of young people?

21st century teachers of music use technology for numerous activities in a similar way to the teaching of other subjects. They embed technology throughout the curriculum, ensuring that the technology supports the learning and teaching of the subject.

Like all teachers they will employ technology to:

1. Enhance teaching and learning by:
   • using a range of technologies to cater for different learning styles
   • using technology to enable learners to collaborate with peers and with partner schools.

2. Improve administration and planning:
   • for learning and teaching. For instance, by using the technology to re-use and adapt documents
   • by using technology to share information and enhance their personal knowledge of music, as well as develop their understanding of professional issues around the subject.

3. Improve assessment and reporting by:
   • recording learner achievement and attainment electronically, tracking pupil progress and using this information in assessment for learning
   • communicating with parents electronically through email and the school learning platform.

These are just a few examples and are not meant to be a comprehensive list. The following pages give some practical advice on how teachers of music (primary and secondary) use technology.
Learning and teaching

The 21st century teacher of music uses technology to offer varied opportunities for all learners (including those who are not learning an instrument) to actively make music and progress.

Supporting learners to progress independently

The teacher who is making the most of technology is aware that starter instrumental tuition is available online through specialist providers. This is usually available by subscription at sites such as Gigajam. Using sites such as this can empower learners to progress independently. Other sites specialise in resources that help learners progress in informal learning schemes, such as Musical futures. For instance, the Show me how to play site helps each member of an aspiring rock band learn their parts for a particular song.

There is software available that will help students model compositional techniques. Using this software, students can explore alternatives in a way that immediately lets them hear the effect in sound as they see a change being made. This applies to standard notation and to other environments in which alternative graphic representations or knobs and sliders are manipulated to make changes. Software such as Sibelius, Garage band, eJay and Ableton are suitable for this approach.

The 21st century teacher is aware of the many new ways to help students process sounds electronically, including computers, so that these sounds can be presented in new contexts. For instance, students can now amplify naturally quiet sounds. Students can also provide an echo with naturally dry sounds and pitch-shift speech or play it backwards in time. Hardware, such as effects pedals, allows sound processing as part of a live performance.

CASE STUDY

Using editing software in the primary classroom

Free software, Audacity, was used by a Year 6 teacher to make it possible for children to explore changing sounds. Children selected sound files, modified them and built them into their own compositions using the sound editing software.

The children listened to Holst’s Planets Suite and found it fascinating to see what the music looked like as the sound waves were visually represented by the software.

They were then tasked with producing their own composition to represent one of the planets and these were also played and visualised by the software program.
Teachers use technology in a way that allows learners to produce interesting musical textures that they would not otherwise be able to perform on their own. This includes keyboard auto-accompaniment styles and backings for improvisations. Clips from searchable online collections offer 21st century teachers the opportunity to use video playback to demonstrate and stimulate ideas or discussion. They use sites such as YouTube, Espresso clipbank and the Philharmonia Orchestra sound exchange for this purpose.

The 21st century teacher also encourages learners to investigate the effect that different soundtracks can have on the perceived mood of a video scene, including composing learners’ own soundtrack to given footage. Teachers use software that allows learners to move randomly through a timeline to edit, while maintaining correct video and audio synchronisation. Software such as Mixcraft and Sibelius can be useful tools for this type of task.

Learners can have access to a range of audio recording/playback equipment that is suitable for use in different contexts. This includes headphones for personal listening, good quality speakers for communal listening and compact portable handheld field recorders for gathering sonic material from the local environment.

The range also includes portable multi-track recorders for exploring composition ideas, DJ equipment to develop hip-hop skills and computers with read/write optical drives for burning new CD recordings.

The teacher who is making the most of technology creates video and audio recordings of learners, both as their work develops and in final performance. These are used for peer review, for setting self-improvement targets and to demonstrate evidence of achievement for assessment.

The 21st century teacher knows how to choose and position microphones to make good quality recordings and edit them using editing software such as Audacity, Microsoft Movie Maker and Apple iMovie. They are also aware which media file formats (such as wave and mpg) are best suited to various purposes and know how to convert between them as necessary.
Encourage learners to collaborate

The 21st century teacher makes relevant resources available on the school’s learning platform, allowing learning to extend beyond the music classroom and school timetable. As well as being a repository for resources, the learning platform also allows learners to share ideas informally and teachers to add their comments.

Teachers can make relevant listening material available over the school network, offering a rich diversity of always-accessible material to contextualise and enrich topics under formal or informal personal study. They consider whether subscribing to an online music library (such as Naxos Music Library) is an appropriate way to deliver this.

Learners can now showcase their work in wider electronic communities. School membership of specialised moderated music education social networking sites allows learners to platform their own material and exchange views on the material of others. Sites such as Numu allow learners to showcase their work and collaborate with their peers.
Secondary students reach the ‘top ten’ on Numu

A Year 9 class composed their own songs as part of a unit on song writing. Their lessons were structured along musical futures lines and pupils were enthusiastic about composing their own work. For this task, the teacher allowed the pupils to decide the style of the song, depending on their interests. This also allowed a range of equipment to be used without the class wanting the same instruments and technology all at the same time.

The school had equipment including electric and bass guitars and a number of practice rooms. Some pupils brought in their own instruments and worked during lunchtimes and after school.

Having composed their songs, the groups then recorded them using either a portable digital recorder or directly into a computer using a stereo microphone.

The teacher encouraged the pupils to upload their song – providing that they were pleased with it – to their own Numu page. The teacher then set the pupils a homework task allocating each pupil three songs from their class on which to offer comments. Their comments were based on a framework and assessment criteria.

One group had their hip hop song reach the top 10 chart on Numu by the end of the first week. This proved to be enormously motivating, not just for them but for the rest of the class.

Learners now have the opportunity to participate, collaborate and share ideas with the local community and across curricular and geographical borders. They can do this by contributing to wikis and blogs about music, or by making a series of regular music-related podcasts for a particular audience (such as a ‘performance of the week’ podcast for parents).

Technologies such as video conferencing can bring distant musicians and stylistic experts into the classroom for special projects or instrumental tuition. Sites such as CLEO (Cumbria and Lancashire Education Online) can offer ideas.

There are many opportunities now for teachers to collaborate with their colleagues to offer learners opportunities to express their musical talents in other contexts. To allow this to happen, teachers embrace opportunities to learn about technologies used by colleagues in other subject areas.
Administration and planning

21st century teachers of music use technology to document their lesson planning and prepare weekly timetables for instrumental tuition and extracurricular clubs. By re-using and adapting these documents, they save time, which can be used to develop and improve other areas. They are also aware of copyright rules and the educational exemptions (see web links section) that allow teachers to plan work using ICT.

Teachers can collect resources for individual learning modules so that these are quick and easy to find. If necessary, teachers use removable storage media, transportable to systems that are not connected to a network or learning platform. Sites such as Secondary music can be used in this way.

Learners can have access to electronic versions of documents, including long-term plans, so that they are aware of how their learning fits into an overall context. Teachers can also make mark schemes available in electronic form and accessible from home as well as school.

There are a variety of music education forums, such as the Teaching music forum, where teachers can exchange opinions, experiences, information and educational resources.

The 21st century teacher maintains a prioritised list of ongoing professional development needs, including their need to become familiar with new equipment. They also keep abreast of professional development issues and opportunities through subject association websites.
**Assessment and reporting**

The 21st century teacher is a confident user of electronic communication mechanisms, such as email, SMS, and the school learning platform. They use these technologies to communicate with parents, colleagues and the wider community.

School learning platforms can be a two-way conduit for electronic submission of music assignments, including media and data files, and feedback of marked assessments (especially in circumstances where re-working and re-submission is needed).

Teachers can maintain an online database, securely accessible to students and parents at any time, containing records of grades and ongoing learning targets. They can also keep records of achievement for individual learners in electronic format. These include text and media files that inform the Assessing Pupils’ Progress (APP) process and can be reviewed, over time, to help identify summative levels of achievement. Teachers can also ensure that the school website contains evidence of learning and assessment, including examples of learners’ compositions and photos and videos of recent musical events.

The 21st century teacher is aware of current external exam board specifications for acceptance of music coursework in specific file or media formats. They ensure that they have the knowledge (and hardware) to guide learners in the preparation/conversion of their coursework submissions. They keep abreast of future developments regarding submission (such as e-portfolios or holding data on removable storage media). They are also aware of any future plans for sitting timetabled music exams (such as listening tests) online.
Are you a 21st century teacher of music?

ABOUT YOU
Consider what you do towards developing your range of professional teaching skills with technology.

Do you use technology to access and share information and enhance your personal knowledge of music and understanding of professional issues around music as a subject?

Do you support independent learning by facilitating activity, showcasing performance and deploying music resources on the school learning platform or website?

Do you use ICT to model music making, enabling learners to investigate the music by changing variables such as pitch, tone and timbre?

Do you support your learners to record, manipulate and share audio and video to refine performance, e.g. podcasts?

Do you audit the range of resources, software and hardware used in the teaching of music and identify gaps in provision?

Do you use technology to access music in real world contexts?

Do you use technology to enable collaboration between learners and with partner schools and their learners?
# Discover more online

For further help and ideas on how to turn your checklist into actions, try reviewing some of these resources.

<table>
<thead>
<tr>
<th><strong>National Association of music Educators (NAME)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Public news and CPD support resources for teachers of music. Private area for subscribed members.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Showcase</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free safe hosting for podcasting, video, radio and blogs. Teachers can moderate and control access. Pupils can have their own portfolio page and use simple social networking tools.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Community/forum</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-commercial website community of UK music teachers. Once registered free of charge, you get your own home page and can offer or download resources and participate in discussions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Music scores</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Website offering 30,000 music scores to print, some for free. Includes an education section. Free Scorch browser plugin is available from here, needed to view and playback the scores.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Songs</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diverse library of cross-curricular songs to learn and sing, with accompanying audio tracks and activities, warm-ups, workouts, tutorials, lesson plans etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Free interactive resources</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward-thinking music education resources with many different approaches to exploring aspects of classical music: activities, guides, video, audio, sample sequencer etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Audio recording/editing software (free)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows direct recording from microphone or import from file. Sounds can be layered, moved in time and/or pitch, reversed, echoes added etc. to make interesting soundscapes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Copyright rules</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paragraphs 32 to 36a of this document describe the legal exemptions for educational use of copyright material. Outside these exemptions a licence is needed (check with your local authority first).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Free software synths</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Downloadable virtual instruments that can be used within any sequencer that supports VST plug-ins. Some are more complex or experimental than others and they are all free!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ictopus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Support service for primary education offering free good quality lesson ideas and teaching suggestions using technology in music.</td>
</tr>
</tbody>
</table>