Computer gaming music: composition

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by James Manwaring

INTRODUCTION

One of the key emerging genres of music over the last 35 years has been computer game music. Since the first playable version of *Tetris* in 1984, music in this genre has grown. We now see key orchestral and cinema composers turning their hands to computer game soundtracks. If we're going to prepare our students for future work in the music industry, it's crucial for them to embrace all styles and genres.

Following an earlier resource on gaming music (AQA AoS2: Computer gaming music, *Music Teacher*, November 2018), here I'm going to consider ways of teaching computer game music using composition. This will include some compositional ideas that can easily be adapted for other genres.

STARTING POINT

Composition is a key component for all the GCSE exam boards, and while each exam board has different criteria, they all share similar, overarching compositional goals. The ideas in this resource can either lead to something suitable for a GCSE entry, or help with the overall teaching of composition. The aim is to use computer games as the key focus for the composing process.

> Students will probably spend a great deal of time playing computer games. Not only will they have an excellent grasp of music from this genre, but they will also be keen to have a go at composing it for themselves. It's crucial that as music teachers we look for topics and projects that engage students. Turning all that screen time at home into a positive thing at school is clearly a good idea.

Where do we start with composition?

The best way to get students engaged with the concept of composition is to get them listening to music. The more they listen, the more intrigued, excited and inspired they will become.

- Give students an open-ended question that asks them to share what jumps out at them as they listen to the particular computer gaming music.
- Give an element-specific question that links back to the music GCSE exam. This is something you can think about beforehand, or you can just ask them to pick any element and say something specific.
- Ask them what story they think the music is portraying. They will know that it's from a computer game because you've told them. But get them to suggest what the game might be about.
- Finish with a question that focuses on atmosphere within the music (something we'll come on to later).

Another approach is to play students some music and get them to come up with some questions – a great way to get them really listening to music. In a genre such as computer gaming, students are likely to have soundtracks that they know well.

This whole starting point of listening and questioning is linked to the idea of being a well-rounded musician. Every task in a music lesson can easily link to the students as performers, listeners and composing. While this resource will focus on composition, these listening tasks will help students in other areas.

Here are some great new computer game scores that you might like to play to your students.

READ DEAD REDEMPTION 2 SOUNDTRACK (WOODY JACKSON)

This is a great score for a new computer game, and contains good examples of Western-themed music. You can listen to the whole score here.

FALLOUT 76 SOUNDTRACK (INON ZUR)

This is one of those game scores that instantly sounds like a cinema score, packed full of amazing orchestral music with lots that students can listen out for. It's interesting that some tracks are quite long, and at times there isn't much going on in the music. This is a key component of video game music, where underscoring is needed for the various different levels and moments in the game. You can listen to the full score here.

THE ONE-NOTE COMPOSITION

One of my favourite ways of starting students with composition is to use the idea of a 'one-note composition'. This is a simple and effective task to get them thinking about music and how it's created.

The task is simple: students have to compose a piece of music that lasts for 30 seconds and only uses one note. They can use the note in different octaves, and they should consider metre, rhythm, dynamics, accents and tempo – basically everything other than melody and harmony. The piece must have a clear beginning, middle and end, and it may contain a motif.

You might think this is an odd way to start composition, but I urge you to give it a try. What the task does is to get students thinking and creating. It helps that it doesn't use melody, because that's possibly the hardest part of any composition. It gets students thinking more about how they can create atmosphere and ideas without having to worry about notes and key signatures. Getting them to consider a beginning, middle and end approach is also really helpful as they have to think about the journey of their piece, and how they can achieve this goal.

You need to ensure, however, that students have been creative during this task, and make sure they review their thinking:
- How have I been creative with my rhythms?
- Have I ensured I include dynamic variety?
- What features of my piece give it a sense of character?
- Have I included a clear beginning, middle and end?
- Does my piece have a motif or key idea that holds it together?
- On a scale of 1 to 10, how creative have I been (10 being the most creative)?

This task will prepare students for the next section, where they will be thinking about atmosphere in video game music. Ask them to consider if they could use their one-note piece for any part of a video game. Does it contain any strong rhythms, or any useful effects?

CREATING ATMOSPHERE IN A COMPOSITION

Video games are full of atmosphere. From the second the game starts, it's crucial that the player is drawn into the game through the music. We therefore need to teach our students how to recognise atmosphere in music, then identify how it is achieved, and finally have a go at creating it themselves. The score to *Call of Duty: Modern Warfare 4* is a good example of atmospheric music that instantly grabs your attention.

> The score for *Battlefield V* is also really good for setting the scene in the opening moments of the music. It uses lots of wonderful techniques, and students will enjoy identifying the way the elements are used.

Of course, atmosphere is not just found in video game music – it has been present in music since the dawn of time. There's certainly a great deal of atmosphere in Handel's *Messiah*, or in Mozart's *Don Giovanni*. Rachel Portman creates amazing atmosphere in her score for the film *The Duchess*, as does Wagner in the *Ring* cycle of operas.

But successful video game composers are really good at drawing in the gamer and providing the ideal atmosphere for every level or part of the game. The famous *Tetris* theme creates a frantic and somewhat frustrating atmosphere with its use of ostinato and repetition. My approach to composing gaming music is not to worry initially about melody, but to focus instead on setting the scene.

For this task, we'll turn to music notation software such as Dorico, Sibelius or Finale. Students are going to be creating a piece of music that creates an atmosphere and sets a scene. It won't have a full theme or lyrical melody, but it will have fragments of melodic ideas or a melodic ostinato.

Step 1

The first step is to generate a list of different atmospheres and scenes that exist in video games. Ask students for their ideas, but here are some to get you started:
- Suspense
- War: horror, heroism, death and survival
- Tension
- Chase
- Waiting
- Discovery

Discuss how some of these ideas are created, and link back to the listening work and any prior listening that the students have undertaken. Pointing out at this stage the value of wider listening is a really good idea, as it's now a key component of most exam boards at GCSE and A level.

Step 2

Here's a list of some of the key musical elements and devices that students will use to help them create atmosphere. You may like to keep this list to yourself and ask the students to come up with their own ideas.
- **Melodic ostinato:** a repeating melody approach is often used by cinema and video game composers. It can appear in different parts and registers, and is something students will definitely want to engage with and use in their piece.
- **Rhythmic ostinato:** a hugely powerful tool to help create atmosphere. Depending on the instrument, a rhythmic ostinato can create anything from a sense of empty space to a full-on chase through a level before you run out of time. A video game composer might use a rhythmic ostinato to keep the music going as an underscore to a longer level. This links back to the one-note composition, where students hopefully discovered the power of rhythm.
- **Pedal and inverted pedal:** these form one of the key tools in creating atmosphere. Students will want to experiment with them, and think about whether they want an inverted pedal or a pedal in the bass – each achieves a very different atmosphere.

- **Sequence:** when you're trying to create a sense of movement in a piece, a melodic sequence can be really helpful. Once students have an ostinato, they might like to try creating ascending and descending sequences to see what atmosphere they add.
- **Percussion:** this can take on one of three roles in a piece of music: to create a melody, to create rhythm, or for colour or effects. Students should think carefully about how they use percussion. A cymbal role or wind chime glissando might help to create a really strong atmosphere, and including a tam-tam or a repeating woodblock rhythm might also help them to set the scene.
- **Chromatic scales:** a well-placed and well-timed chromatic scale, either descending or ascending, can add a real sense of atmosphere, particularly in the build-up to a climax.
- **Dissonant chords or cluster chords:** there's something really powerful about dissonance. Not only can it sound dark, muddy and complex, but it also means that the resolve or resolution that comes after it is all the more powerful. Encourage students to create almost 'random' cluster chords, or teach them how to use diminished chords. The key thing is that they use chords for their effect and not for their harmonic role in a piece. This is somewhat like Wagner in the Prelude to *Tristan and Isolde*, or Bernard Herrmann in his score to *Psycho*. Combine a cluster chord with an exciting rhythm and you can create some amazing atmosphere.
- **Syncopation:** it's generally quite exciting to avoid any sense of strict time in music when you're trying to create an atmosphere. Encourage students to try tying notes over bars and avoiding the strong beats. This can also give the music a real sense of forward momentum.
- **Sudden changes in pitch, tempo, tonality and dynamics:** not much explanation is needed here, but change is good because in a video game there is always something new around the corner.
- **Fragmentation:** melodies and chord patterns are great, but there's something powerful in using small fragments that occur almost randomly in a piece. Adding a triangle ding or a high-pitched motif above a melody can really bring a piece to life.
- **String textures:** a great deal of the music you hear in video games relies on the rich and full use of string textures. Whether it be pedal notes or long, broad melodic lines, strings are a useful tool for creating atmosphere. Get students to think about how strings are used in the examples they listen to.

Step 3

Once you've been through this list, students should pick an atmosphere that they want to create. It might be a good idea for them to write their own composition brief at this stage, one that includes an overview of the story and any wider listening that they think might help them. They might like to think of a specific level of a game that they're playing, which will give them a really strong focus.

Step 4

Students should now pick three to five of the ideas above to use in their composition, and should start to create an atmosphere for their piece. Think initially about the opening, and how students will instantly grab the gamer. Composing a melody isn't essential here: at most, they can use a melodic ostinato. For now, students should just think about atmosphere and how they can achieve the ideas set out in their brief. One tip is for students to start with an inverted pedal note, then add a rhythm and cluster chords underneath, which quickly generates a sense of atmosphere.

Step 5

Insist that students use trial and error when creating their atmosphere. The piece will be around 30 to 60 seconds long, and it needs to fit their brief. They need to keep listening to the piece and adapting what they do. They might like to consider how they build up their texture, and to avoid giving too much away at the start.

Video game music often has lots of atmospheric instrumental sections that act as the underscore for levels that are longer or have more parts. Get students to practise shifting between moods, and look at how they can string different moods together. As a level in a game progresses, the gamer needs the music to change. Getting past a particular section or understanding the story of the game is often reliant on strong and suitable music.

COMPUTER GAME MELODY

Much like a cinema score, a modern computer game is likely to have a strong theme that develops throughout the game. A film will often have different themes that represent a place, time or character. Once students have created atmosphere and thought about how they might underscore a level, they need to consider the theme tune for their game.

Let's consider the main theme from *Call of Duty: Modern Warfare 3*. This is a very effective theme tune that sets the scene really well, and you could listen to it with your students and discuss how atmosphere is created at the start. Here is a simplified version of the main melody:

Start by discussing this theme with your students. Ask them for their thoughts on the key musical features, and what makes it suitable for a video game theme. I deliberately chose something in the bass clef as students can get too stuck in the treble clef: you might like to get a student to play it through on a trombone or a cello to help bring it to life.

Now that students are familiar with this theme, they are going to undertake two key tasks to further their understanding of writing a melody for a video game.

1. **Create variations of this main theme:** this might be using some of the functions available on their music notation software, such as inversion and retrograde. Alternatively, they can turn it backwards or upside down themselves. What other variations can students come up with? Could they change the mood of this main theme by altering the time signature or tonality?
2. **Create an atmosphere for at least three variations of main theme:** this will bring together knowledge from the previous section, and also get students thinking about how to set the scene for a video game level. They could add percussion, pedal notes or some kind of accompanying ostinato.

You could also try importing some scenes from a video game into your music software so that students can add their music to the visuals. This can easily be done in most notation software, and you can also use a music sequencer such as Cubase or Garageband. There are plenty of examples of in-game action online, for example here. When students see their music playing alongside an actual computer game, it will really bring it to life for them.

SONIC PI AND COMPUTER GAME MUSIC

If you're not already using Sonic Pi, download the software here and follow David Ashworth's earlier *Music Teacher* resource (March 2018) for ways of introducing it to students. There are also some useful projects and ideas here.

I will be referring to the *Tetris* project on the Code Club Projects website.

You can read more about the interesting history of 'Korobeiniki' here, which goes to show that even the simplest of tunes can have a fascinating history.

Creating atmosphere and writing symphonic- or cinema-style video game pieces is one angle that we've considered so far. But there's a whole genre of game music that owes a great deal to 'Korobeiniki', the title of the *Tetris* theme tune.

The Code Club Projects resource on creating the *Tetris* theme is a great place to start, but make sure that students create the tune themselves using Sonic Pi:

Once students have created the *Tetris* theme in Sonic Pi, they should go on to create their own piece of gaming music. It needs to fulfil the following criteria:

1. The theme needs to be one that can gradually speed up/slow down.
2. The theme needs to be 8 to 16 bars long.
3. The theme needs to use the Dorian or Aeolian modes.

You can, of course, add your own ideas to this list. Students should now create a piece of gaming music that has a greater sense of repetition, based around a strong, catchy and memorable theme tune – a skill that they will need throughout their time as a composition student.

Once they've created their computer game theme, they can use Sonic Pi to add drums and other instrumental parts. Code Club Projects has some good resources, and students can easily add parts from other projects. The extent of their piece will depend on how well they grasp the coding nature of the software.

Once this is complete, find some footage of in-game play from a video game. You could use a game like *Tetris* (and believe it or not, there are lots of online videos of people playing *Tetris*).

CONCLUSION

Computer game music is here to stay, and it's possibly one of the genres that young people are exposed to the most. The hours they spend playing games means that they are in a good position to appreciate the music behind the games.

One of the best ways to embrace any genre is to try creating it for yourself, and this resource has provided some suggestions for doing that. Creating atmosphere, following a storyline and thinking about the style of game are all key to the composition process.

Creating a composition brief for a computer game is a great way of starting the process. Students can then make a positive out of all that screen time, and create a piece of music of music fit for a GCSE entry. Take advantage the huge resource of online videos to get them watching and listening to lots of examples of video games.