Digital Gamification in Private Music Education

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Should learning be as much fun as a game? Many educators think so. There is a trend toward using game mechanics in educational settings to increase student engagement. In this article I draw from my master's research some lessons that may be helpful to educators who are thinking about incorporating digital gaming into their instruction. Gamification is the use of game elements in a non-game context. For example, if you give yourself a gold star on a chart for every article you read in this journal, you are gamifying your reading. My results are directly applicable to individual music instruction, which is my area of expertise, but might be generalizable to other educational contexts.

Phenomenological research of piano practice and video gaming

My research (Wagner, 2016) took as its starting point my experiences as a pianist and piano teacher. As I reflected on ways I turn my own piano practice sessions into little games in order to stay motivated, I wondered about connections students who play video games might be making between their video game play and their piano practice habits.

I chose to explore this question by asking about experiences of flow. Flow is what Mihalyi Csikszentmihalyi (1990) called a feeling of total immersion, creativity and involvement where the challenges of the activity and a person's skills to meet them are balanced and high. Flow is a peak experience that often occurs when a person is doing an activity with no external reward, such as rock climbing or playing music for pleasure.

Flow is the holy grail of video game design. Just as a rock climber focuses intently on each successive hand and foothold in order to achieve the goal of reaching the top, video games are designed to lead the player from goal to goal, leaving little time to reflect or to feel self-conscious along the way.

In my research I asked, *How do young piano learners experience flow and how does it compare to their experiences of flow in video gaming?* My methodology was phenomenological inquiry, which focuses on situated bodily experiences. I conducted semi-structured interviews with five participants who took weekly private piano lessons and played at least seven hours of video games each week. My participants played visually intense adventure-type games that transported players to a virtual world.

I focused on particular lived experiences of flow in gaming and individual piano practice. I asked participants about the four existentials:

Lived space: Where were you? What was going on around you?

Lived body: How did it feel in your body? Tell me about your feet, legs, guts, upper body, and headspace.

Lived time: How did you experience the passage of time? In flow, time can feel like it speeds up or slows down.

Lived human relationships: Who else was involved? Who cared that you were doing this? Who did you talk to about this before or after?

I found that they had more flow-like experiences during video game play than during piano practice.

I asked the participants whether their facility with digital technology crossed over into their piano practice. They generally were not using digital technology or game elements to help themselves find flow in piano practice.

Gamification

Learning a piece of music is a non-game context where a person might establish small goals and rewards in order to achieve flow during repetitive practice that might otherwise get boring. Birch (2012) explored using some elements of gamification in piano education. These included: leaderboards, where students earned points for desired behaviours and competed with one another for public recognition; individual rewards that were triggered by achieving small goals along the route to a larger accomplishment; and avatars, where students personalized their representatives, who became actors in the drama of their piano practice. This type of gamification has been applied in many other educational contexts (e.g., Sanchez, Young, & Jouneau-Sion, 2016; Ibáñez, Di-Serio, & Delgado-Kloos, 2014). It layers game elements that are not intrinsically connected to the particular subject of study on top of the actual learning material.

My participants did not report concocting or being led to experience any of these elements of gamification in their piano practice. In the interview data I discovered three key differences between their flow experiences in video gaming and piano practice.

Flow in Video Gaming

Being transported. The participants in my research had flow-like experiences when they felt totally transported to another world someone had created in a video game. They viewed piano practice as a real-world work activity in which they did not expect to experience flow. Piano was work, while video games were play. This attitude was new to me, as my experience as a child taking piano lessons had been just the opposite. My play involved activities that had a connection to real life: messing around in the kitchen, exploring my neighbourhood on my bike, taking care of my dolls, and building structures with Lego. To sit at the piano and

play music was to be transported to an imagined world that had little connection with day-to-day needs. In contrast, the participants in my research clearly saw playing the piano as a real-world skill that would benefit them in concrete ways – cognitively, physically, and emotionally. They did not connect their video game play experience with learning any real-world skills.

Mortal danger. When the participants played the piano, no one was trying to kill them. In video gaming they experienced mortal danger, where they felt there was something at stake if they did not play well. They were concerned about wasting their time and about disappointing their fellow online players. Piano practice had much lower stakes in the moment because if they made a mistake they could fix it immediately with no consequences. The social consequences for piano study were much greater than for video gaming. They practiced in order to please themselves, their parents, their teachers, and their peers.

Limitlessness. In video gaming, the participants were amazed and transported by their sense of limitlessness in the game environment. Open world games had seemingly endless physical objects and locations to explore. Shooter games had a long stream of enemies to conquer and there were often bonus levels or variations to be played once the player had beaten the main game. In video gaming players could only see a small fraction of the action or programming on the screen at one time. This is different than learning a piece of music, where the music remains unmoving on the piano and can be taken in at a glance. There is no mystery about how and when it will end. The constant motion and endless visual rewards of a video game make it a stimulating environment that draws the player ever onward in an apparently limitless stream of flow-inducing goals.

Using Flow in Music Teaching

So how might an educator use an understanding of these elements of flow in video gaming to help students find flow in learning music or another skill or subject?

Keep it real. The first lesson is a caution. My participants were adamant that piano study belonged in real life. It was not a game. To try to explicitly gamify their piano learning would likely cheapen the experience. Some participants expressed shame around their video gaming, as they and others did not see it as useful. It would be unfortunate to unwittingly apply a layer of shame to music learning by turning it into a game. I therefore recommend that music educators keep it real. Learning technical skills, stylistic techniques, and theoretical music concepts should remain the explicit aims of music instruction. Advancing on a leaderboard or obtaining a virtual reward should not become the goals of learning music. The ability to enjoy and perform beautiful music is a reward in itself.

A little danger. On the road to being able to perform beautiful music, a little danger might help music students focus on the micro-goals they need to achieve to become proficient. Duke and Simmons' (2006) observation of famous music teachers revealed that they always stopped their students as soon as they made a mistake. Students were not allowed to finish the piece before receiving feedback on the error. This behaviour mirrors my participants' experience of mortal danger in video gaming, where the computer was always watching and waiting for them to mess up. Video game death was the game's way of stopping them immediately when they made a mistake. Because death was always looming, the players had an added incentive to remain focused and intent on their micro-goals. This focus is a key element of flow experience.

In teaching physical skills like playing notes on a piano, a teacher does not want students to lay down neural paths for incorrect motions. This is a good reason to prevent students from repeating physical mistakes. All teachers worry about their students' sense of self-efficacy if they are constantly being corrected, but I think my research shows that if students understand why they are being stopped they can rise to the occasion to self-correct before the teacher has a chance to stop them. Video game players do not stop playing their games because they might die; the computer's capacity to notice and punish them for every mistake is exactly what creates flow in the game. The trick for doing this in piano instruction is to set tasks that students understand and in which they can reasonably hope to achieve success, but that are also in their zone of proximal development. This is where the critical challenge-skill balance aspect of flow comes into play. Digital technology has not yet solved the problem of decoding more than one note played at a time, which means music practice apps that can detect and punish piano students for errors are still in the future.

Demand more. There are several levels at which educators can use a feeling of limitlessness to create flow conditions for their students. Music study involves mastery but there is always more a musician can do to improve the technical, stylistic, and emotional quality of performance. Many students believe that once they can bash out the right notes in the correct rhythm, a piece is finished and they are ready to move on to the next. Teachers need to demand more, showing their students that communicating with an audience goes beyond the correct notes and rhythms. Tying music production to the needs of the audience creates a game-like narrative where the purpose of the activity is not merely to satisfy a set of arbitrary standards, but to serve a social goal. In the same way that a video game might engage a player who wants to save the

princess or slay the dragon, piano practice should have the aim of making a real or imaginary audience feel something.

Sequential challenges. Another way educators can create limitlessness is to dole out challenges sequentially. This is an area where some of the new apps and online practice tools can be useful. Mobile apps like Notemaker and Practicia ask students to record their practice sessions so teachers, parents, and peers can hear their work product. Setting the challenges to be recorded so that completing one task is a trigger for the next challenge would be a way to help draw music students into flow in the same way that beating one boss leads a video game player into the next level with a harder boss.

Conclusion. I have found the phenomenology of flow to be a useful lens for looking at ways to motivate students in their music learning. While digital technology and games will never replace the teacher-student relationship, this technology might help to connect student and teacher outside of lesson times and to provide feedback to students in their individual practice. Music teachers have a role in educating their students about how to use digital technology effectively to enhance their practice experience.

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