

REPORT | PEER REVIEWED

## Level Up: Gaming to a Beat

### A Virtual Music Composition Program Putting Video Game Culture at the Forefront

Christopher Pizzute <sup>1\*</sup>

<sup>1</sup> The Louis Armstrong Center for Music and Medicine, New York, USA

\* [Christopher.pizzute2@mountsinai.org](mailto:Christopher.pizzute2@mountsinai.org)

Received 17 August 2022; Accepted 22 May 2023; Published 1 July 2023

Editor: Susan Hadley

Reviewers: Vern Miller, Gabrielle Nicole Banzon

#### Abstract

Video game culture is an ever-growing aspect of our current society that is virtually an untapped resource for engagement, connection, and inspiration in the current compendium of music education and music therapy practice. The COVID-19 pandemic presented a significant barrier to engaging children in enriching educational experiences when schools transitioned to a virtual format and brought to light the significant stressors impacting today's youth. Neurodivergent and neurotypical children benefited greatly from engaging in a virtual music composition/education program designed to enrich their experience through a culturally relevant medium, video games. This article presents an in-depth examination of the creation, design, and implementation of the mainstream virtual music composition/education program, which integrated music therapy intervention and video game culture for neurodivergent and neurotypical children.

**Keywords:** music therapy; video game culture; music education; music composition, virtual

#### Introduction

How do we create meaningful moments in a virtual space? Especially in our current times, as post-COVID professionals are positioned to be increasingly accustomed to virtual conditions, this question has moved to the forefront of our consideration. This new hurdle to tackle when engaging with students, clients, or patients invites inquiries into how we connect with individuals to the same degree as we once could within a proximal physical space. How can we create a connection? How do we provide sustained engagement? How do we enhance excitement about learning? These were some of the questions I asked

myself when positing the concept of creating a virtual program for neurodivergent children and teens ages 10 to 15 years old. I also sought to address those who were neurotypically developing, as there are many benefits to engaging with and integrating diverse groups of children. As I pondered how a program such as this could exist, my mind turned to one medium that has been underutilized and absent from educational and therapeutic spaces, yet has been actively utilized by children on a daily basis; video games.

### ***Video Games under Fire, but Why?***

Ever since their inception, video games have tended to be marred by criticism and stigma. In 1993, a US senate congressional hearing was conducted to address violence in video games. Senators Joe Lieberman and Herb Kohl oversaw this hearing, citing their main reasoning was that the video game industry lacked regulation or accountability (WP Company, 1993). Though the reason for the hearing indicated clear bias, it also inspired the creation of the Entertainment Software Association (ESA) which, in turn, formed the Entertainment Software Ratings Board (ESRB) to oversee and regulate video games by rating them based on their content (Kohler, 2009). The ESA, since its formation, has done tremendous work in researching the beneficial qualities of video games by releasing an annual fact sheet about the growth of video games. Yet, even with the establishment of the ESA and ESRB, the earlier hearing had done its damage in creating a stigma against video game participation. An uproar of criticism of the video game industry fueled the controversy surrounding video games that has continued to this day.

In 2013, the Obama administration requested the US Congress to support funding for the Center for Disease Control (CDC) to study the connection between video games and media on violence after the Sandy Hook shooting (Marshall, 2013). In 2019, President Donald Trump insinuated during a public address that video games are linked to violent tendencies though not citing any studies to back this claim (Voytko, 2019; see also Shanley, 2019). In 2022, with the remarkable and unfortunate rise in mass shootings in the US, politicians like Ted Cruz have continued to reiterate this notion that video games are marginally responsible for gun violence, most recently at the annual National Rifle Association convention just days after the Uvalde shooting (Cooper, 2022).

Yet, to this date, no study has been able to prove causality between such a relationship. In 2020, a revised resolution report was released by the American Psychological Association addressing violent video games stating that, “Violence is a complex social problem that likely stems from many factors that warrant attention from researchers, policymakers, and the public. Attributing violence to violent video games is not scientifically sound and draws attention away from other factors” (American Psychological Association, 2020). Kocurek (2019), a contributor to the Washington Post and associate professor of digital humanities and media studies at the Illinois Institute of Technology wrote:

Since their inception, video games have served as a source of moral panic and a convenient scapegoat for acts of spectacular violence. But placing the blame on video games only allows us to avoid reckoning with the deeper roots of violence and grappling with a broken culture. (para. 2)

Popular social media also continues to contribute to the ongoing stigmatization of video games by continuing to examine video games in a negative light. US celebrity Joe Rogan, who hosts the #1 podcast on Spotify (Spangler, 2022), spoke during episode #1514 about his thoughts on video games holding no significant value and being a waste of time (Rogan, 2020, 44:25). Although this may appear to be an insignificant comment, because of his large following of active listeners, these words caused a reverberation within the gaming community which sparked backlash and criticism of the generalized opinion on video

game consumption (Lewis, 2020). Television personality Dr. Philip C. McGraw of *Dr. Phil* has dedicated multiple episodes to sensationalizing video game habits by using eye-catching titles like *I'm Afraid of My Violent, Video Game Addicted Son* (Hermstad & Zionts, 2019), *Our Device-Addicted, Violent Teen Controls the House* (Hermstad & Arluck, 2020), and *Save My Lazy Grandson before I Make Him Homeless!* Hermstad & Farrelly, 2021). Each episode devotes a significant portion of its time focusing on each individual's gaming habits as a major contributor to their maladaptive behavior. In the latter episode (*Save My Lazy Grandson before I Make Him Homeless!*), Dr. Phil and a life coach began to apparently mock and label the gentleman's video game habits/"lazy" behavior which inspires laughter from the studio audience observed in this clip [here](#) (Dr. Phil, 2021).

I take offense to these generalizations/stereotypes associated with video games that continue to permeate society. These generalizations appear to be inspired by common myths such as, video games desensitize children to violence, encourage violence, and/or promote isolating behaviors, all of which have been found to be nonfactual (Jenkins, 2003; see also Etchells, 2019; Marie, 2017; Smith, 2021). In fact, the ongoing research in video games continues to prove the immense benefit of engaging in video games. In one study, Crew (2015) found that active video game play increases grey matter production and brain connectivity in the insular cortex, the area of the brain that is responsible for higher cognitive functioning. This is quite the opposite from Joe Rogan's position that video games are a waste of time.

A systematic review which explored the links between video gaming and mental health, found that individuals who play video games displayed improved mood, emotional regulation, and stress management skills compared to individuals who did not engage in video games at all (Jones et al., 2014). In other studies, Granic, Lobel, and Engels (2013) concluded that video games promote pro-social behavior, and Nardi and Harris (2006) found that playing video games led to improvement in cooperation, teamwork, communication skills, and even offline socialization.

These stigmas, generalizations, and myths have inhibited many individuals from seeing the possible benefits of engaging in and utilizing video games as a means of connecting with our current youth population. In 2021, the ESA indicated that of the current population of 329 million people in the US, 227 million (children and adults) play video games with 87% of those reporting that video games are a source of self-care (ESA, 2021). In 2013, it was indicated that 97% of American children play video games for at least one hour per day (Granic, Lobel & Engels, 2013).

### **Video Game Culture: A Useful Tool**

To date, two identified music therapy articles reference video game usage. However, these two studies focused solely on the creation of a music program using Nintendo Wii software. One study was focused on children with behavioral disorders (Benveniste et al., 2009) and the other focused on individuals living with Alzheimer's disease (Boulay et al., 2011). In neither of these studies was video game culture referenced or explored. This trend has continued in other areas of study exploring the clinical and educational benefits of video games. In 2020, the FDA approved EndeavorRx, which is a mobile-style video game for children 8 to 12 with ADHD (Food and Drug Administration, 2020). In 2007, Lumo Labs released Lumosity which is an application focused on improving individuals' cognitive functions. A comprehensive study was released in 2015 noting its cognitive benefits (Hardy et al., 2015). In medical care, companies like Level Ex have created games to support doctors in improving their clinical skills and knowledge. However, still, video game culture isn't represented in any of these examples and seems to be absent from consideration or conversation. These absences provided the impetus and incentive for my conceptual development of the program, *Level Up: Gaming to a Beat*. Children don't engage

in video games because it solely supports mental health, they play video games to enjoy themselves, and with the current generation of youth, gaming is an essential part of their ever-growing identity as distinct individual people (Bassiouni & Hackley, 2016).

People create personalities and identities inside the video game worlds they play within, and most children today are growing up with access to video games. They, therefore, merit the same respect and consideration as other frequently-engaged child activities. In some cases, individuals amplify their own identities inside the video games they play by creating an extension of who they are as a person (Bessiere et al., 2007). There is great potential to tap into the lives of children, connecting with opportunities to build rapport. For example, when children are asked about their favorite music, one may find it takes them a moment to provide an answer. But when asked what video games they play, it's an immediate response—children name instantly all of the titles they enjoy playing. The lack of representation of video game culture and my own relationship with video games inspired me to move forward and create a program that could promote video game culture as a positive tool for inspiring children to learn. Additionally, in developing this program, I sought to create a social environment for neurodivergent and neurotypical children to commune with each other in a space free of stigma and barriers.

### ***My Journey with Video Games***

Before diving into *Level Up: Gaming to a Beat*, it is important to first address my relationship with video games. I am not an outsider to video game culture. I grew up observing and engaging in the evolution of video games from the arcade hall, transitioning into the home, and now observing the continued evolution of video games on mobile devices and virtual reality. I observed and took part in the console wars during the early 1990s between Nintendo and Sega. To be specific, I was initially team Sega playing my Sega Genesis, but turned to Nintendo with the release of the Nintendo 64. I became an Xbox fanboy from the time of the original Xbox console's release in 2001 and playing the revolutionary game, Halo: Combat Evolved (Bungie, 2001), though I owned a PlayStation 2 prior to the Xbox console's release. I am a Personal Computer (PC) gamer having built my own PC playing titles like World of Warcraft (Blizzard Entertainment, 2004), Destiny 2 (Bungie, 2017), Witcher 3: Wild Hunt (CD Projekt RED, 2015) and Guild Wars 2 (ArenaNet, 2012). As a gamer, I have a preference for role-playing games as they allow me as the player to immerse myself in a fantasy world for countless hours, free to explore these new worlds at my own leisure.

Video games for me aren't just a source of entertainment, but a source of comfort, self-care, a means of socialization, and an extension of my identity as a person. I experienced and continue to experience the benefits of gaming. Video gaming helped me cope with the stress of being an adolescent as I experienced constant bullying while growing up. It helped me forge relationships and connect with individuals I would have never had the opportunity to meet outside of the gaming space. Video games supported me in finding who I am as a person. My relationship with video games were the primary source of inspiration when creating *Level Up: Gaming to a Beat* and further, noticing an apparent lack of representation regarding video games' inclusion in both music therapy practice and education.

### ***Creating Level Up: Gaming to a Beat and Its Implementation***

*Level Up: Gaming to a Beat* was created in response to multiple events and circumstances that took place from 2020 into 2021. My longtime relationship with video game culture and understanding firsthand the potential self-care and social benefits of engaging in video games provided the initial incentive. In 2021, COVID-19 was a major incentive for this

creation within our hospital systems affecting child/teen communities within schools that were working for prolonged periods in hybrid or virtual formats. Taking notice of how video games seemed to be a major existent resource that fortified children's identities and an absence of this potential opportunity for maximizing the engagement of commercial video games as a source of learning and social discourse with children in any capacity, I was moved to utilize gaming in a new and innovative forum.

Gen Z youth have grown up with unprecedented access to video games, being able to engage in video games on almost any device and at almost any time, whether it may be on personal computers, home consoles, tablets, VR headsets, or mobile phones. In the most recent digital media trends analysis, Gen Z youth have stated they prefer to engage in video games over any other source of entertainment (Westcott et al., 2022) with 87% of youth in 2021 stating they engage in video games daily (Westcott et al., 2021). The apparent ease of access and significant engagement that youth experience with video games was at the core of *Level Up: Gaming to a Beat's* design. This is what fueled my process of developing the program. As a music therapist, creating engaging interventions to further incentivize learning, creativity, and engagement, prompted the development of a program that would support children's growth throughout their experience, especially amidst a pandemic that threatened engagement and created isolation (Leonhardt, 2022).

The Louis Armstrong Center for Music and Medicine supported our launch of 13 two-week virtual workshops facilitated over Zoom under contract with the Kennedy Center's VSA Arts Connect All-Workshop/Residency Program. *Level Up: Gaming to a Beat* took place over the course of a six-month period from March 2021 to August 2021. Each workshop was facilitated or overseen by one primary music therapist and two to three support staff. Through grassroots efforts and communication with schools, engaging in social media, and good old fashion word of mouth, *Level Up: Gaming to a Beat* served over 116 children and teens with the majority (79) of those youth being neurodivergent children and children who have physical disabilities. Diagnoses of neurodivergent children ranged from autism, attention deficit disorder (ADD), and attention-deficit/hyperactivity disorder (ADHD). There was one physical disability diagnosis, asthma, present within the participants. Due to the virtual format, we were able to connect children from all over the United States and also reached some children in Canada.

Each workshop met six times over those two weeks on Mondays, Wednesdays, and Fridays with our central focus being an engagement with participants in music composition and music technology through the exploration of preferred video games and video game music. Each workshop day was 90 minutes with a mandatory 10-minute break at the midpoint to give the participants a moment to have a snack or go to the bathroom.

### **Week One**

Week one was relegated to assessment, education, and orientation to music composition and music technology. Participants were provided with the scope of the workshop, our ground rules, and an engaging learning experience about video game history and video game music history on days one and two with day three focused on presenting music technology. The assessment model incorporated the 13 areas of inquiry model (Loewy, 2000) which was utilized as a foundation to track psychosocial development throughout the workshop to adapt and support each participant in maximizing their engagement and participation. In addition to utilizing this assessment tool, the Zoom polling system was used to gauge the groups' individual reasons for joining *Level Up: Gaming to a Beat*, their consumption of video games, and their current knowledge of music technology. This polling system was also used during the enrichment phase of the first week to present interesting trivia questions to the participants while learning about video game history and video game music history (See Figure 1).

<p><b>Video Game History Trivia Example</b> The Founder of Atari (Ted Bushnell) created what dining franchise? (a) Burger King (b) Olive Garden (c) Chuck E. Cheese (Correct Answer) (d) Pizza Hut</p> <p><b>Video Game Music History Trivia Example</b> How long is the longest piece of video game music? (a) 30 minutes (b) 45 minutes (c) 1 hour (d) 1 hour and 15 minutes (Correct Answer)</p>
---

**Figure 1.** Video Game Trivia Examples.

For the video game and music history presentations, we used PowerPoint to organize and present the material, even though we knew there was a chance that the participants would have seen this as something similar to a classroom setting. To mitigate resistance to this, opportunities for engagement were introduced including question and answer segments, active music-making interventions (which will be examined later in the paper), music listening exercises, Zoom trivia poll questions, critical thinking experiences, and open dialogue about video games and what they mean to each member of the group. Open dialogues and music interventions supported the participants in learning about music terms and supported their process of thinking critically about music in video games and why video games and video game music was important. Additionally, and throughout the workshop experience, participants were given opportunities to share their video game paraphernalia to support their personal relationships with video games. All these elements promoted pro-social behavior, turn-taking, cultural inclusion, and further integration into the workshop experience. Creating themes and decision-making related to creative orchestration sparked ingenuity that seemed to enhance their sense of self.

Day three provided the group with an introduction to open-source browser-based music composition programs. The applications chosen were: Music Grid (<https://music-grid.surge.sh>), Google Song Maker (<https://musiclab.chromeexperiments.com/Song-Maker>), Beepbox (<https://www.beepbox.co>), and Soundtrap (<https://www.soundtrap.com>). These applications were chosen as they were free to use, browser friendly, and displayed increased complexity in that order. This provided each participant with a variety of options when it came to choosing and creating their music while taking into account a participant's functional capabilities.

To support the participants in learning about these programs, we worked to provide a clear tutorial on each music application. This included information on how to save their created music and was followed by the participants engaging in a brief (3-5 minute) music composition challenge on each application. Once the timer had expired, the participants shared their music anonymously with the instructor. The instructor then shared each member's music while the group aimed to guess which participant created the shared piece. This further supported the group's pro-social behavior by investing in in-group cohesion and social reciprocity by honoring their efforts in creating music within each application. At the close of the week, the participants were instructed to continue to explore the music applications over the weekend in anticipation of next week's music creation phase.

## ***Week Two***

In week two, the participants focused on creating video game inspired music on one of the music applications of their choosing. During the final meeting, the participants shared their music creations in the “Video Game Olympics.” The breakout room feature was used during this week, grouping participants based on the level of support required by referencing their initial assessment and progress throughout the workshop experience. Participants were also grouped based on the relationships they had made with other workshop participants. Throughout this process, we would provide support and encouragement for the participants by providing music suggestions, technical support, and troubleshooting solutions. An example of a troubleshooting encounter we experienced was when an autistic participant had significant difficulty understanding how to access and open their desired music application—Beepbox. Our solution was to provide remote control privileges to allow them to create their music on the staff member’s screen in one of the dedicated Zoom breakout rooms.

A major component of this phase was to continue to support the participants in thinking critically about the music they desired to make. Some examples of questions to support critical thinking were: “What inspired you to create this music?”; “What type of video game would this music be in?”; “What emotion are you trying to express in this music?”; “What tempo, meter, and mode are you using?”; and, “What other instruments do you think will support your music?” These questions supported the process of developing their music concepts and furthered their abilities to speak about their music when presenting their completed work during the final meeting.

On day six, the group presented their video game-inspired music in the “Video Game Olympics.” The focus of this day was to celebrate their creative ingenuity and efforts by sharing their music compositions in culmination of these efforts. Before each participant shared their music, they were instructed to say which music application they chose and what their inspiration was for creating their video game music. The atmosphere of the final meeting was a relaxed environment in which participants were afforded the opportunity to share gameplay from their favorite video games, continue to talk about their relationship with video games, engage in leisurely games like drawasaurus, and create synchronous music in programs such as Plink.in. All of these experiences had the aim of celebrating their shared achievement of completing the program.

## ***Music Therapy Interventions***

Designing interventions that would be accessible to both neurodivergent and neurotypical children was a broad-ranged incentive. As a music therapist, the unique skillset of understanding and adapting music interventions supported the children’s varying levels of engagement. Multiple interventions were utilized throughout each workshop to enrich the participants’ experience and support their journey of learning about video games, music composition, and music technology.

### **Warm up: Consistency and Assessment**

On the first day of each workshop, participants were greeted by a live adapted version of Eiffel 65’s “My Console.” The therapist would include their name and video game choices into the song being presented to the group. The inclusion of the song promoted social engagement and inclusion right from the start, at entry. It also provided us with the group preferred video games we could recall during our examination of video game music and composition later in the week.

### Story song

Story song (Bosco, 2002) was an adaptation of the intervention designed by Judi Bosco and Joanne Loewy. In our adaptation, the leader provided a prologue to a video game narrative and posed questions to the participants to drive the story forward. The created improvised music with the participants’ input supported the evolving story. The story song intervention supported the participants working together and prompted them to think about the type of music that could support the growing narrative.

### Video game Madlibs

We provided an experience where each participant took turns adding a noun, verb, adjective, etc. to a pre-composed video game narrative (See Figure 2). After completing the narrative and reading aloud, each member explored music from their favorite video games and shared, with the group, music that they believe fit their narrative, followed by an explanation for selecting their chosen music.

### Video game theme

The Video Game Theme provided an individualized experience where each participant dialogued with the instructor about what they thought their own personal video game music theme would sound like. This prompted usage and implementation of the music terminology learned. The instructor and the participant dialogued back and forth to create a unique piece of music that would represent their own video game theme. The end result was an improvised piece of music being played by the therapist on an electric keyboard in response the suggestions and ideas conveyed by the participant.



Figure 2. Video Game Madlibs Example.

### Personal Reflections

When designing this program, I aimed to create something fun that kids could enjoy. What I didn’t expect was the overwhelming amount of fun and engagement participants seemed to have throughout the program’s lifespan. I can remember one participant quizzing me about his favorite car models from *Asphalt 9* (a mobile racing game) by continuously changing his virtual background on Zoom to display these cars from the game. Another participant shared their copy of Super Mario Bros. Encyclopedia as their piece of video game paraphilia, gleaming with pride as they did so. Another participant became excited when they knew the answer to each trivia question being presented to the group. And another participant logged back into the Zoom room after one of the workshops had completed asking politely, “Can I do it again?”

These were aspects that showed me how much children enjoyed their experience and how much they enjoy video games. There is so much potential in seeing video games as a tool both in an educational space and, as a music therapist, in a therapeutic space.



One of the most powerful observations I witnessed was the support participants gave to one another. Whether an individual was neurodivergent or neurotypical, the comradery and support each workshop group seemed to provide for each other was beautiful to observe and support. One last story that comes to mind from the program that exemplifies this involves four participants.

In one of our later workshops, I witnessed the forming of a friendship between four participants: three autistic individuals and one neurotypical individual. One lived in Canada, one lived in Florida, and the two siblings lived in Ohio. Throughout this workshop, they continued to talk with one another, ask about their favorite video games, and dialogue about how they were composing their music for the workshop. This was observed with all the participants in the workshop, but the exchanges these four individuals had were evolving into something more. During the first day of the second week, the siblings informed the group they were currently working on their own video game with one sibling doing the programming and the other writing the music and contributing artwork to the game. The individual from Florida chirped up and asked politely, “Can I be a beta tester for the game?” which brought a smile to both siblings who accepted their request.

The younger sibling of the brothers was paired with another autistic individual during the second week as they seemed to have developed a bond throughout the first week of the workshop. On the final day, each participant shared their music compositions with the entire group. Each participant was then requested to express something they enjoyed about the music they had heard. When the younger sibling’s partner shared his music with the group, the younger sibling replied, “Your music is amazing, would you like to make the music for our game?” He replied, “Yes!” with no hesitation, displaying an ear-to-ear smile. In this moment, all four participants became adamant to continue to stay in contact with one another as they all lived quite a distance from each other. They were informed that an inquiry with their parents would ensue to see if it would be ok to share their emails with each other. After receiving confirmation from each of their parents, they were all connected to continue to create their video game together.

A couple of days later, I received an email from one of the parents (the participant who shared his music with the group and was asked to be the composer for the video game) expressing sincere gratitude for the program, informing me “He really enjoyed his time with you and the group. It really boosted his confidence. He loves music and video games but doesn’t really have any good platforms to share his art. I really appreciate that you opened this up.”<sup>1</sup>

## Conclusion

Designing a program inclusive of video game culture where children and teens can compose creative themes attributed to their relationships with video games was something conceptually I thought would work. The main goals of the program were to foster creative opportunity through engagement and risk-taking, and to provide educational instruction based on music learning activities that built opportunities for self-expression and self-esteem. Additionally, this program aimed to increase children’s knowledge of music through immersion in a familiar medium (video games) by providing engagement in visual, auditory, and tactile fields, as well as improving cognitive function. In response, children were able to deepen their appreciation for a medium that is indelibly part of their lifeworld by increasing their knowledge of video game culture and history, instrumentation, and production while gaining agency and mastery in how video game music is created and the

---

<sup>1</sup> This quote was shared with permission from the parent of this participant.

functions that such music serves within the video games they enjoy playing. From this experience, I believe utilizing video games in music therapy practice and education can be such a powerful tool and resource to provide meaningful translation of how children navigate and process their own lives—with choice and nuance.

I believe that the goals of this program were achieved as most participants came into the workshop with minimal knowledge of music, music terminology, music composition, and limited understanding of video game culture and history. At the closing of each workshop experience, participants were observed utilizing newly found music terminology attributed to the program's lifespan and displayed the capacity for creating and defining their digital music compositions on four separate digital music applications. As a result of participating in this program, participants gained a deeper appreciation for the medium they all enjoy taking part in, video games.

The affordance of this virtual space and the inclusion of video games as a catalyst for introducing music composition and music technology provided the impetus for participants to become excited about the workshop experience and to learn. It also afforded space for individuals who may have never met outside of the virtual space to create bonds, socialize, interact, learn, and share their passion for video games.

The direct examination of the construction of video games and video game music afforded participants the unique opportunity to engage with the creative and dynamic process of the genre itself, enriching their connection with the artform of video games. Learning about the history of video game music and creating their own music compositions supported their navigation and conceptualization of the emotion that can be conveyed in music. Lastly, the environment afforded the participants to build their own musical identities, increase their self-confidence/self-esteem, and cultivate an aptitude for musical expression and artistic impression.

Video game culture is so much a part of this new generation's lives that one might infer that it is a part of their own identities, especially during the past years of the pandemic restriction. Children identify with the games they play and this impacts the way they socialize, commune, and process the world. *Level Up: Gaming to a Beat* created a space conducive to learning that was relatable, accessible, and enjoyable for neurodivergent and neurotypical children and teens. By embracing video game culture, children were provided the opportunity to validate their relationship with video games while learning important socialization skills, computing skills, music technology skills, and music composition skills. Video game culture provides a new lens for connecting with children and supporting them in their journey through development. There is so much more to learn from video game culture and this program is only the beginning.

## Acknowledgements

This program was made possible thanks to the support of the Louis Armstrong Center for Music and Medicine and The Kennedy Center's VSA Arts Connects All-Workshop/Residency program. Without their support, this program would not have been possible. At the Louis Armstrong Center for Music and Medicine, we serve as an internship and fieldwork site for those receiving their bachelors or masters in music therapy and for those receiving their certification as child life specialists. I would like to thank all of the music therapy interns, music therapy fieldwork students, our music therapy fellow, and child life interns who provided support during the implementation of *Level Up: Gaming to a Beat*. Thank you to music therapy interns Ally Barrele, Justin Ferrell, Claudia Orozco, and Ruby Weaver. Thank you to music therapy fellow Dannyele Crawford. Thank you to summer fieldwork student, Sarah Lum. And thank you to child life interns Abigail Geiger and Hannah Philips.

## About the Author

**Christopher Pizzute**, MA, LCAT-LP, MT-BC is a music psychotherapist working in inpatient oncology, radiation oncology, and chemotherapy at Mount Sinai West in New York City. He received his Master's in music therapy from Montclair State University and holds a Bachelor's degree in music composition/music theory. His expertise extends to palliative, psychiatric, geriatric, pediatric, and neonatal care. He is a songwriter, an artist, and video game culture advocate. His work has extended to outreach programs focused on presenting the benefit of video game music in music therapy practice. His master's thesis was on the examination of video game culture and its possible inclusion in music therapy practice.

## References

- American Psychological Association. (2020, February). *APA resolution on violent video games* [Press release]. <https://www.apa.org/about/policy/resolution-violent-video-games.pdf>
- Bassiouni, D. H., & Hackley, C. (2016). Video games and young children's evolving sense of identity: A qualitative study. *Young Consumers*, 17(2), 127–142. <https://doi.org/10.1108/YC-082015-00551>
- Benveniste, S., Jouvelot, P., Lecourt, E. & Michel, R. (2009, June 3–5). *Designing Wiiimprovisation for mediation in group music therapy with children suffering from behavioral disorders* [Conference presentation] 8th International Conference on Interaction Design and Children Conference, Como, Italy. <https://dl.acm.org/doi/pdf/10.1145/1551788.1551793>
- Bessiere, K., Fleming Seay, A., & Kiesler, S. (2007). The ideal elf: Identity exploration in World of Warcraft. *CyberPsychology & Behavior*, 10(5), 530–535. <https://doi.org/10.1089/cpb.2007.9994>
- Bosco, J. (2002). Resolution vs. re-enactment: A story song approach to working with trauma. In J. V. Loewy & A. Frisch Hara (Eds.), *Caring for the caregiver: The use of music and music therapy in grief and trauma*. The American Music Therapy Association, Inc.
- Boulay, M., Benveniste, S., Boespflug, S., Jouvelot, P., & Rigaud, A. (2011). A pilot usability study of MINWii, a music therapy game for demented patients. *Technology and Health Care*, 19(4), 233–246. <https://doi.org/10.3233/THC-2011-0628>
- Cooper, D. (2022, May 28). Ted Cruz blames violent video games for mass shootings while speaking at NRA convention. *Game Rant*. <https://gamerant.com/ted-cruz-blames-violent-video-games-texas-shooting-nra-convention/>
- Crew, B. (2015, April 28). Gamers have more grey matter and better brain connectivity, study suggests. *ScienceAlert*. <https://www.sciencealert.com/gamers-have-more-grey-matter-and-better-brain-connectivity-study-suggests>
- Destiny 2 [PC] (2017). Bungie.
- Dr. Phil (2021, January 5). “Lazy” grandson makes excuses for everything [Video]. *YouTube*. <https://youtu.be/PLbIPLIK4L8>
- Entertainment Software Association. (2021). *2021 Essential facts about the video game industry*. <https://www.theesa.com/resource/2021-essential-facts-about-the-video-game-industry/>
- Etchells, P. (2019, April 6). Five damaging myths about video games—Let's shoot'em up. *The Guardian*. <https://www.theguardian.com/games/2019/apr/06/five-damaging->

[myths-about-video-games-lets-shoot-em-up](#)

- Food and Drug Administration. (2020, June 15). *FDA permits marketing of first game-based digital therapeutic to improve attention function in children with ADHD*. [Press release]. <https://www.fda.gov/news-events/press-announcements/fda-permits-marketing-first-game-based-digital-therapeutic-improve-attention-function-children-adhd>
- Granic, I., Lobel, A., & Engels, R. (2013). The benefits of playing video games. *American Psychologist*, 69(1), 66–78. <https://doi.org/10.1037/a0034857>
- Guild Wars 2* [PC] (2012). ArenaNet.
- Halo: Combat Evolved* [Xbox]. (2001). Bungie.
- Hardy J., Nelson R., Thomason M., Sternberg D., Katovich K, Farzin F., & Scanlon, M. (2015). Enhancing cognitive abilities with comprehensive training: A large, online, randomized, active-controlled trial. *Plos One*, 10(9). <https://doi.org/10.1371/journal.pone.0134467>
- Hermstad, L. C. (Director), & Arluck, J. (Writer). (2020, February 24). Our device-addicted, violent teen controls the house (Season 18, Episode 109) [TV series episode]. In P. C. McGraw & C. Pennington (Executive Producers,), *Dr. Phil*. CBS Media Ventures. CBS Broadcasting, Inc.
- Hermstad, L. C. (Director), & Farelly, P. (Writer). (2021, January 5). Save my lazy grandson before I make him homeless! (Season 19, Episode 71) [TV series episode]. In P. C. McGraw & C. Pennington (Executive Producers,), *Dr. Phil*. CBS Media Ventures. CBS Broadcasting, Inc.
- Hermstad, L. C. (Director), & Zions, S. (Writer). (2019, February 1). I'm afraid of my violent, video game addicted son (Season 17, Episode 94) [TV series episode]. In P. C. McGraw & C. Pennington (Executive Producers,), *Dr. Phil*. CBS Media Ventures. CBS Broadcasting, Inc.
- Jenkins, H. (2003). Reality bytes: Eight myths about video games debunked. *PBS*. [The Video Game Revolution: "Eight Myths About Video Games Debunked" by Henry Jenkins | PBS](#)
- Jones, C., Scholes, L., Johnson, D., Katsikitis, M., & Carras, M. (2014). Gaming well: Links between videogames and flourishing mental health. *Frontiers in Psychology*, 5(260), 1–8. <https://doi.org/10.3389/fpsyg.2014.00260>
- Kocurek, C.A. (2019). Why we scapegoat video games for mass violence and why it's a mistake. *The Washington Post*. <https://www.washingtonpost.com/outlook/2019/08/09/why-we-scapegoat-video-games-mass-violence-why-its-mistake/>
- Kohler, C. (2009, July 29). July 29, 1994: Videogame makers propose ratings board to Congress. *Wired*. <https://www.wired.com/2009/07/dayintech-0729/>
- Leonhardt, D. (2022, January 4). No Way to Grow Up. *The New York Times*. <https://www.nytimes.com/2022/01/04/briefing/american-children-crisis-pandemic.html>
- Lewis, I. (2020, July 27). “You don’t get anywhere”: Joe Rogan says that playing video games is a “waste of time.” *Independent*. <https://www.independent.co.uk/games/joe-rogan-experience-podcast-video-games-twitch-ninja-drlupo-a9639306.html>
- Loewy, J. (2000). Music psychotherapy assessment. *Music Therapy Perspectives*, 18(1), 47–58. <https://doi.org/10.1093/mtp/18.1.47>
- Marie, T. (2017, July 14). Biggest myths about video games people believe. *Grunge*. <https://www.grunge.com/37831/biggest-myths-video-games-people-believe/>

- Marshall, E. (2013, January 16). Obama lifts ban on funding gun violence research. *Science*. <https://www.science.org/content/article/obama-lifts-ban-funding-gun-violence-research>
- Nardi, B. & Harris, J. (2006, November 4-8). *Strangers and friends: Collaborative play in World of Warcraft* [Conference session]. 2006 Computer Supported Cooperative Work, Banff, Alberta, Canada. Presented at the Conference on Computer Supported Cooperative Work, 2006. Alberta, Canada. <https://doi.org/10.1145/1180875.1180898>
- Pennington, C. & McGraw, P. C. (2002–present). *Dr. Phil* [TV Series] CBS Media Ventures; CBS Broadcasting, Inc.
- Rogan, J. (Host). (2020, July 23) Joe De Sena (No. 1514) [Audio podcast episode]. In *The Joe Rogan Experience*. Spotify. <https://open.spotify.com/episode/5OwcTg3qUWupSHKgiQaarf?si=nsbc4YsbRwC4jH0WaHp5Aw>
- Shanley, P. (2019, August 9). Trump's video game attack reignites decades-old debate. *The Hollywood Reporter*. <https://www.hollywoodreporter.com/news/politics-news/trumps-video-game-attack-reignites-decades-old-violence-debate-1230504/>
- Smith, D. (2021, June 16). Revealing the truth about video game myths & their affect on children. *Horizon Education Centers*. <https://www.horizoneducationcenters.org/blog/bid/202986/revealing-the-truth-about-video-game-myths-their-affect-on-children>
- Spangler, T. (2022). Joe Rogan had the most popular podcast on Spotify in 2022. *Variety*. <https://variety.com/2022/digital/news/joe-rogan-spotify-top-podcast-2022-1235444743/>
- Voytko, L. (2019, August 5). Trump suggests video games connected to violence: Research doesn't support that. *Forbes*. <https://www.forbes.com/sites/lisettevoytko/2019/08/05/trump-blames-video-games-for-shootings-but-research-doesnt-support-that/?sh=e8adb4b11dc9>
- Westcott, K., Arbanas, J., Arkenberg, C., Auxier, B., Louks, J., & Downs, K. (2022, March 28). 2022 Digital media trends, 16<sup>th</sup> edition: Toward the metaverse. *Deloitte*. <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/summary.html>
- Westcott, K., Arbanas, J., Downs, K., Arkenberg, C., & Jarvis, D. (2021, April 16) Digital media trends, 15<sup>th</sup> edition: Courting the consumer in a world of choice. *Deloitte*. <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/summary-2021.html>
- The Witcher 3: Wild Hunt* [PC]. (2015). CD Projekt Red.
- World of Warcraft* [PC]. (2004). Blizzard Entertainment.
- WP Company. (1993, December 2). Senator calls for warnings on video games. *The Washington Post*. <https://www.washingtonpost.com/archive/lifestyle/1993/12/02/senator-calls-for-warnings-on-video-games/74450503-ed9a-4084-9910-b8e65ac6f0cb/>