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SCHOOL OF MUSIC

The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown

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Abstract

Despite the successes of online education, students often learn and develop skills in classroom music ensembles that cannot be replicated in online learning. Virtual learning is a new tool for some educators and during the 2020-2022 COVID-19 Pandemic lockdown, many schools were not prepared for the sudden changes the lockdowns needed. Since the lockdown, there have been few studies which examine student music engagement in 100% virtual learning as compared to in-classroom instruction. This qualitative research study examines in what ways music students engage in 100% virtual learning compared to students in a traditional classroom in the areas of musical and academic achievement. This study also reviews what techniques have been used in virtual learning to teach and develop various skills in music education. The research results will show ways in which in-classroom instruction excels over virtual learning for overall student musical development. This project is an examination of the relevant literature such as journal articles, books, theses, case studies and dissertations written within the last ten years. The implications of this project will encourage further research in the fields of music education, technology, and online curriculum development.

Key Words: Music education, COVID-19, pandemic, virtual learning, effectiveness, online

Contents

List of Tables	vii
List of Figures	viii
Chapter One: Introduction	1
Background	1
Statement of the Problem	2
Statement of the Purpose.....	2
Significance of the Study	3
Research Questions and Sub Questions	5
Definition of Terms.....	6
Summary	7
Chapter Two: Literature Review	8
Section I: Online Instrumental Music Education History	8
Musical Achievement in Online Education.....	12
Academic Achievement in Online Education	144
Section II: The Problems with Online Instrumental Music Education	177
Section III: The Advantages of Online Instrumental Music Education	233
Summary	288
Chapter Three: Methods.....	30
Introduction	30

Design.....	30
Questions and Hypotheses	311
Participants	322
Setting.....	333
Instrumentation.....	333
Procedures	344
Data Analysis	344
Summary.....	35
Chapter Four: Research Findings.....	366
Section I.....	366
Section II	577
Summary	63
Chapter Five: Conclusion.....	65
Summary of Study.....	66
Summary of Findings and Prior Research	68
Limitations	72
Recommendations for Future Study.....	72
Implications for Practice	74
Summary	76
Appendix A: IRB Approval	78

Appendix B: Recruitment Post	80
Appendix C: Screening Survey	81
Appendix D: Questionnaire	82
Bibliography	86

List of Tables

Table 1 – Creating in Online Music Education During the Lockdowns.....	54
Table 2 – Performing in Online Music Education During the Lockdowns.....	55
Table 3 – Responding in Online Music Education During the Lockdowns.....	56
Table 4 – Community Engagement in Online Music Education During the Lockdowns.....	57
Table 5 – The School Board and its’ Effectiveness in Online Music Education During the Lockdowns.....	58
Table 6 – Planning of Online Music Education During the Lockdowns.....	58
Table 7 – Overall Survey Response.....	63

List of Figures

Figure 1- Effectiveness of Online Music Education Programs in Creating.....	37
Figure 2 – Online Music Education and Positive Climate.....	37
Figure 3 – Incorporating Technology for Studying and Music-Making.....	388
Figure 4 – Inclusivity and Online Music Education.....	399
Figure 5 – Faculty Involvement in Events During the COVID-19 Lockdowns.....	40
Figure 6 – Student Performance Support During the COVID-19 Lockdowns.....	41
Figure 7 – Online Environment and Encouraging Performance.....	42
Figure 8 – Online Music Education and Overall Improvement.....	43
Figure 9 – Online Music Education and Aural Skills Development.....	43
Figure 10 – Online Music Education and Teamwork Development.....	44
Figure 11 – Online Music Courses and Concentration.....	45
Figure 12 – Intrinsic Motivation and Learning.....	46
Figure 13 – Student Behavior and Online Music Education.....	47
Figure 14 – Outlined Musical Achievement in Online Music Education.....	47
Figure 15 – Communal Representation in Online Music Education.....	48
Figure 16 – Parental and Community Involvement in Online Music Education.....	49
Figure 17 – Community Engagement in Online Music Programs.....	50
Figure 18 – Online Music Education and Equal Treatment.....	51
Figure 19 – Resource Allocation for Online Music Education During the COVID -19 Lockdowns	51
Figure 20 – Online Music Education Planning.....	52
Figure 21 – Online Music Education and Student Feedback.....	53

Figure 22 – Online Music Programs and Student-to-Teacher Ratio During the COVID-19

Lockdowns..... 53

Chapter One: Introduction

The purpose of this qualitative study is to show the advantages and disadvantages of online learning for musical and academic achievement in musical instrumental courses. This project explores the impact these advantages and disadvantages have on the students' success and what techniques can be used to further enhance music education courses. The long-term effect of virtual learning and its' impact on the development of music students and the solutions are still unanswered prior to this study. This research provides recommendations for online music education curriculum development with an emphasis on improving the academic and musical abilities of the online students to bridge the gap with students who study in the classroom.

Background

Due to the COVID-19 pandemic, most students were out of school in 2020-2022. Today, many students have returned to classrooms, but remote learning continues to be offered in many areas. Some students chose to continue 100% remote learning, while many were in a hybrid system. Teachers and parents have had to juggle the challenges of supplying their children with an education while continuing to work and learn unfamiliar methods of technology. These practices alone can have a negative effect on the musical and academic achievement of students. Students are at a disadvantage in virtual learning as the role of social interaction and hands-on learning is nearly non-existent. Online learning has also been shown to make learning new information more difficult for students with disabilities, as well as those who speak English as a second language.

Statement of the Problem

In the COVID-19 pandemic, many teachers and organizations had been mandated to create online learning environments without the proper infrastructure or training. Other disadvantages of online learning include the lack of social and emotional skills, lack of physical activity, too much screen time and reduced personal interactions. These disadvantages are important to study because they affect a students' musical and academic achievement. Johann Laister, Director of the Multidisciplinary European Research Institute Graz states:

The e-learning market rapidly grows but much of this learning is dedicated to pure computer-based training, with the major application in the field of software training, where world-wide standardized training packages are available. What is missing in these traditional e-learning scenarios is social cohesion, group awareness and the possibility to co-operate and collaborate with other learners.¹

Statement of the Purpose

Students should be offered an education that will help themselves and society, regardless of how this education is given. Students should also be afforded the ability to receive such an education. Scott Edgar writes that:

With the mass cancellation of student musical events, school, and college closures, and shifts to online learning becoming a part of our new reality, this is a unique opportunity for students and teachers to develop new strategies for teaching and learning and to reflect and grow as musicians and people.²

¹ Johann Laister and Sandra Kober, *Social Aspects of Collaborative Learning in Virtual Learning Environments*, (February 2005): 6, accessed March 1, 2021, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.462.3651&rep=rep1&type=pdf;>

2. Scott N. Edgar, Andrew E. Morrison, and Bob Morrison, "Optimism Through the COVID-19 Disruption: Utilizing Social Emotional Learning for Reflection and Growth," *School Band and Orchestra*, (January 2021): 1, accessed February 6, 2021, https://sbomagazine.com/optimism-through-the-covid-19-disruption-utilizing-social-emotional-learning-for-reflection-and-growth/#disqus_thread.

Significance of the Study

Online music education programs have faced several challenges since 2020. There has not been much time for researchers to figure out the effects of students engaging in 100% online music performance classes as opposed to in-classroom instruction. Cathryn Leibinger writes that “we are in an unprecedented time in educational history and teachers around the world are being pushed beyond their training and comfort level to open virtual classrooms in the midst of the Covid-19 pandemic.”³

Thomas Arnett, author at Christensen Institute, states that “the pandemic has accelerated the adoption of educational technologies. But experience and know-how about using those technologies to their greatest advantage has not been so easy to transplant.”⁴

Online learning allows study at one’s leisure and the ability to study with people all over the world in real time. Nedeva Veselina, Associate Professor at Trakia University, writes that “There are numerous benefits of online learning that are endorsed by many students, especially from part-time students, who have to work and study.”⁵ There are also disadvantages to online learning, as noted by H.C. Lane, Associate Professor of Educational Psychology and Informatics:

for learning basic intercultural communicative skills, a 3-dimensional (3-D) interface with animation and sound produced equivalent learning to a more static 2-D interface. However, learners took significantly longer to analyze and respond to the actions of

³ Cathryn Leibinger, “Navigating the Online Music Education Experience,” *Bandworld Magazine*, (March 15, 2020): 1, accessed March 30, 2022, <https://www.bandworld.org/magazine/index.php/navigating-the-online-music-education-experience/>.

⁴ Thomas Arnett, “3 Ideas to Help Teachers Thrive this Year,” *Edutopia*, (February 11, 2021): 1, accessed February 20, 2021, <https://www.edutopia.org/article/3-ideas-help-teachers-thrive-year>.

⁵ Nedeva Veselina and Dineva Snejana, “Advantages and Disadvantages of Virtual and Classical Training Experience Gained from COVID-19 Pandemic,” *Proceedings of the 15th International Conference on Virtual Learning*, 248-253, (October 2020): 3, accessed March 15, 2023, <https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/pt/covidwho-1361119>.

animated virtual humans, suggesting a deeper engagement.⁶

Online education programs can expand learning for students in a variety of methods but there are still some problems when compared to in person classes. Michele Kaschub, Professor of Music and Director of Music Teacher Education at the University of Southern Maine, writes:

There have been some serious attempts made to meet the evolving needs of learners through distance learning, blended classes, online classes, and massive open online courses...while these initiatives hint at what might become future best practices, they are still being refined. Unfortunately, there have also been less careful efforts that have served to point out some of the pitfalls of these approaches.⁷

There are five developmental areas recognized as important skills students develop in education. These include cognitive development, social and emotional development, speech and language development, fine motor skill development, and gross motor skill development. Instrumental music education can include all five of these areas of development when the curriculum is structured properly for the students' needs. Music education has been shown to enhance language capabilities, reading comprehension skills, memory, hand-eye coordination, study habits, mental processing, and problem-solving skills. Other benefits include teamwork, leadership, discipline, and respect. Music education also helps the local community by including groups, organizations, and parents into the students' learning and development by allowing opportunities to take part in events and performances.

Some music education performance courses include versions of the Collaborative for Academic, Social, and Emotional Learning (CASEL) five core competencies of social emotional

⁶ H. C. Lane, M.J. Hays, M.G. Core, and D. Auerbach, "Learning Intercultural Communication Skills with Virtual Humans: Feedback and Fidelity," *Journal of Educational Psychology*, 105(4), 1026–1035 (2013): 1, accessed March 2023, <https://doi.org/10.1037/a0031506>.

⁷ Michele Kaschub, *Promising Practices in 21st Century Music Teacher Education*, (United States: Oxford University Press, 2014), 13.

learning. These five core competencies are self-awareness, self-management, responsible decision-making, social awareness, and relationship skills. CASEL also promotes strategies for supporting students during school closures with trauma-informed practices.

Research Questions and Sub Questions

Parents' choice of school is dependent on location and if they choose a full-time, partial, or online learning environment. The results of these different approaches to education are just now being learned. There is evidence of music classes having a positive effect on a student's social and behavioral health. In *The Power of Music: Its' Impact on the Intellectual, Social and Personal Development of Children and Young People*, Hallam writes that:

Some students perceived the benefits of music classes in being listening to music and the development of musical skills while others referred to the sheer fun and therapeutic nature of music, how it gave them confidence to perform in front of others, how it facilitated group work and how it enabled them to learn to express themselves.⁸

For educators to ensure they are creating an all-inclusive environment for learning, there are some differences in these teaching approaches that should be defined. Bennett writes that:

Distance education began to expand with the need to educate those who were not among the elite, those who could not afford full time residence at an educational institution, and those who were geographically isolated. This need arose out of a desire to provide equal access to educational opportunities. Education through correspondence was the first form of distance education.⁹

⁸ Susan Hallam, "The Power of Music: Its Impact on the Intellectual, Social and Personal Development of Children and Young People," *International Journal of Music Education*, 28, 269-289 (2010):17, accessed March 2023, <https://doi.org/10.1177/0255761410370658>; 17.

⁹ Katharine W. Bennett, *A Case Study of Perceptions of Students, Teachers, and Administrators on Distance Learning and Music Education in Newfoundland and Labrador; A Constructivist Perspective*, (M.E. thesis, Memorial University of Newfoundland, 2010), 15.

Therefore, there are questions to be answered about these approaches to music education. The following research questions are answered in this study:

1. In what ways does the musical and academic development of students who engage in 100% online learning differ from students in the classroom?
2. What are some teaching techniques in music education that could be implemented in online learning to help greater musical and academic achievement?

Definition of Terms

COVID-19: is a disease caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in Wuhan City, Hubei Province, China, and was declared a global health emergency by the WHO (World Health Organization) on January 30, 2020.¹⁰

Interpersonal Gap: The difference between what a speaker intends to convey and the impact of the message on a listener. Many factors contribute to this gap, some related to the speaker's encoding of the message and others to the listener's decoding of it. Research has shown that speakers often assume that their intent is more transparent to listeners than it actually is, a tendency called the signal amplification bias, which may lead speakers to perceive that their listeners are less responsive than they would like them to be.¹¹

Virtual Reality: A simulated three-dimensional environment created through the memory, graphics, and processes of a computer. It is often used to create simulated environments for

¹⁰ Emedicine.medscape.com.

¹¹ Collins dictionary.

activities such as flying a plane or exploring space, which are expensive or dangerous to experience directly. Supporting hardware and software tools, including gloves and head monitors with real-time feedback, are often used to immerse and train humans in this virtual reality.¹²

Summary

Parents and teachers have struggled with continuing education for their children during the lockdowns. Online learning is new for some students and technological challenges made things even more difficult. Online music education programs offer a variety of methods for teaching, but the programs may not compare to in person classes. This study explores the differences in musical and academic development of students in these programs and suggests ways to improve online music education programs.

¹² Collins dictionary.

Chapter Two: Literature Review

Many teachers were mandated to create online learning environments in a short amount of time without the proper resources or training. While some teachers and schools have been prepared for online education for quite some time, others found this to be quite the challenge. Online education differs from in school learning because of the lack of social and emotional skills development, lack of physical activity, too much screen time and reduced personal interactions. Eventually, some students had the option of going to school full-time, partially, or to continue with only online learning. The repercussions of these practices are only beginning to be realized by comparing these programs and their effects on students.

This literature review will examine a brief history of music education to present the trends and patterns that have become popular over time. A review of comparative studies displays the themes, questions, and concepts of development of self, social behavior, musical and academic achievement in online instrumental music education. By comparing the relevant sources this review incorporates the debates on the effectiveness of online instrumental music education.

Section I: Online Instrumental Music Education History

Based on a research study done in Nairobi County, Kenya, Barbra Akombo found that “there were more negative impacts of COVID-19 on music education than positive impacts.”¹³ This was due to the loss of employment for families, digital illiteracy, and lack of appropriate

¹³ Barbra Achando Akombo, “The Impact of COVID-19 on Music Pedagogy in Kenya: A Questionnaire Study,” *Lessons from Global Classrooms*, Vol. 1 (2022): 9.

resources for teaching. Akombo's findings suggest that this led to a higher drop-out rate of students in music programs.

There has been a history of problems with integrating technology into music education classes. Benno Spieker writes in *Perspectives for Music Education in Schools after COVID-19: The Potential of Digital Media* that "Although many tremendous advances based on significant scientific research and inventions have been recorded in the field of computer music during recent decades, their influence in updating formal music education in line with these technological advances seems to be much slower."¹⁴

Even though formal music education may not be incorporating technology usage as fast as other subject areas have, many teachers have taken it upon themselves to utilize this resource. As technology has become more incorporated into music making and recording, music also influenced the development of technology for online music education programs. Music educators were more comfortable with using technology because of its' use in popular music. In *Music Education with Digital Technology*, John Finney writes that "music has long been at the forefront of technological advancement, with music educators harnessing its potential long before the advent of digital technology."¹⁵

This early acceptance of technology and online music education helped teachers to develop themselves as educators. Online courses also gave teachers new resources for curriculum development and overall program advancement. Mao Qiusi writes "the application of

¹⁴ Benno Spieker and Morel Koren, "Perspectives for Music Education in Schools after COVID-19: The Potential of Digital Media," *Israel Studies in Musicology Online*, Vol. 18, 75-85, (2021): 75.

¹⁵ John Finney, *Music Education with Digital Technology*, (United Kingdom: Bloomsbury Publishing, 2007), 1.

scientific and technological means in the music field has laid the foundation for the creation of new works, while providing a new direction and teaching thinking for music educators.”¹⁶

In *Aesthetic Education and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online*, Danijela Mihailovic remarks on how teachers and students could learn to use technology to make education effective. Mihailovic writes:

This prompted us to explore the ways in which teaching has been implemented under the new circumstances in fields where direct contact is either necessary or substantial, and the ways in which art, i.e., music education has been carried out. Upon embarking on the unknown territory, both students and teachers had to figure out various ‘transitional solutions’ for the implementation of the teaching process.¹⁷

Online music education gave teachers more freedom to design their courses to better fit their needs. In *A Framework for Teaching Music Online*, Carol Johnson writes that “online learning in the mid-2010s was becoming an approach that could address differentiated learning approaches through careful instructional design and educational learning theory.”¹⁸

Online music education courses can be tailored to even individual students. Virginia Lamothe has reviewed the current research on designing online music curriculum. Lamothe studied with a focus on the collegiate level courses and what has worked in the last few years in online music education. Lamothe proposes theories for the future of online music education in *Pedagogy Development for Teaching Online Music* with “It is possible that an online format

¹⁶ Mao Qiusi, “Research on the Improvement Method of Music Education Level Under the Background of AI Technology,” *Mobile Information Systems*, vol. 2022, Article ID 7616619, 8 pages, (2022): 1, accessed June 2023, <https://doi.org/10.1155/2022/7616619>.

¹⁷ Danijela Zdravic Mihailovic, “Aesthetic Education and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online?” *Facta Universitatis, Series: Philosophy, Sociology, Psychology and History*, Vol. 20, No 1, pp. 87-96, (2021): 87, accessed May 2023, <https://doi.org/10.22190/FUPSPH2101087Z>.

¹⁸ Carol Johnson, *A Framework for Teaching Music Online*, (United Kingdom: Bloomsbury Publishing, 2022), 6.

calls for extra care concerning the phenomenon of the faculty-student relationship. In order to communicate a desire to develop a strong relationship during online training, the teacher should approach each student as a highly individualized case.”¹⁹

Many agree that music online courses should be presented in a variety of teaching methods. Sevan Nart explored the possibilities in using online music education in his study *Music Software in the Technology Integrated Music Education*. Nart found that “software can serve for that the student experiences a learning process with active participation through both gaining and spreading musical knowledge and creating music. Besides this, since not every student learns in the same way and same speed, the individual will be provided different learning possibilities.”²⁰

The flexibility that online teaching gave teachers enabled them to further connect with their students at times. Leon de Bruin explores some benefits of online learning in *Instrumental Music Educators in a COVID Landscape: A Reassertion of Relationality and Connection in Teaching Practice* with:

The teachers slowed down the pace of delivery as teachers realized the benefits of spending more time enquiring about student learning rather than quickly assuming it and moving on. This allowed time for students to be more purposeful in their language and to articulate their reasoning and thinking behind their answers.²¹

¹⁹ Virginia Christy Lamothe, *Pedagogy Development for Teaching Online Music*, (United States: IGI Global, 2018), 33.

²⁰ Sevan Nart, “Music Software in the Technology Integrated Music Education,” *The Turkish Online Journal of Educational Technology*, Vol. 15, issue 2, (Apr. 2016): 83.

²¹ Leon R. de Bruin, “Instrumental Music Educators in a COVID Landscape: A Reassertion of Relationality and Connection in Teaching Practice,” *Frontiers in Psychology*, Vol. 11, (2021): DOI: 10.3389/fpsyg.2020.624717.

David Hebert describes the benefits that have been shown from online music education in his article *Five Challenges and Solutions in Online Music Teacher Education* with “Via online programs, learning can be tailored to fit the working schedules of busy professionals, obtained in the comfort of their own homes or wherever they may happen to be in the world.”²²

In a recent study in Indonesia, Richard Kapoyos agrees that technology has not only enhanced but kept education alive during a difficult time. He does suggest that teachers have a great responsibility in using technology and curriculum development. Kapoyos stated that:

Technology has its’ own role related to the continuity of music education at both the primary and tertiary education levels. Things that must be considered in these various problems are that positive cultural values and local wisdom must always be instilled at an ideological and practical level so that they can form a cultural identity and character that has the ability to respond the challenges during the Covid-19 pandemic.²³

Musical Achievement in Online Education

This review in musical achievement in online education shows a variety of views on the subject. The ability of students to perform, create and understand theory is essential to the success of any music program. These factors can be influenced by attitudes and beliefs about their current programs. Heather Shouldice remarks:

Teachers’ beliefs about assessment were also related to their beliefs about the purpose of elementary general music. Specifically, beliefs that students should be assessed on knowledge, skills, creativity, and participation correlated respectively with beliefs that

²² David G. Hebert, “Five Challenges and Solutions in Online Music Teacher Education,” *Research and Issues in Music Education*, Vol. 5, No. 1, (Sep. 2007): 8.

²³ Richard Junior Kapoyos, “Continuity of Music Education During the Covid-19 Pandemic in the Society 5.0 Era,” *Journal of International Conference Proceedings (JICP)* 4 (1), 321-331, (2021): 329.

the purpose of elementary general music is to develop musical knowledge, to develop musical skills, to promote creativity, and to develop musical appreciation.²⁴

Some researchers believe that online instruction cannot achieve the same levels of musical achievement as in person studies. In a recent study by Keith Dye, *Student and Instructor Behaviors in Online Music Lessons: An Exploratory Study*, Dye documents the behaviors of teachers and students in online videoconferencing lessons for music. Dye writes that:

The strongest concern is reserved for the use of any online lesson as a replacement for traditional instruction. Music is communicated in a unique and personal manner when it is experienced live as evident when comparing a live performance experience to a recording. It stands to reason that beyond the negative issues of reliability and clarity, there often is an inherent quality to live musical communication that cannot be broadcast or reproduced. As recorded music over the past 100 years has not eliminated the desire of humans to experience live musical performance, it might be speculated that videoconferencing should not eliminate the necessity and preference for live face-to face instruction.²⁵

Online tools can enhance communication and still make online education affective for musical achievement. Juan Vega writes that “Rehearsals of the choirs and instrumental ensembles cannot replicate online for technical reasons, but teachers can establish a unique communication space using online tools. Such space enables students to express their anxiety and receive a piece of advice from their teachers.”²⁶

²⁴ Heather N. Shouldice, "An Exploratory Study of the Relationships Between Teachers' Beliefs About Musical Ability, Assessment, and the Purpose of Elementary General Music," *Visions of Research in Music Education*: Vol. 39, Article 6, (2022): 109, accessed April 2023, <https://opencommons.uconn.edu/vrme/vol39/iss1/6>.

²⁵ Keith Dye, “Students and Instructor Behaviors in Online Music Lessons: An Exploratory Study,” *International Journal of Music Education*, 1-10, (2015): 9.

²⁶ Juan C. Vega, “Music (Education) During the Pandemic of COVID-19,” *Academia Letters*, (2021): 2.

In a recent study *The Effect of Individualized Online Instruction on TPACK Skills and Achievement in Piano Lessons*, Yavuz Kaleli investigated online teaching instruction for piano students. Kaleli found that online and face to face learning was more effective than routine distance learning. Kaleli also discovered that online learning increased the musical achievement of their current curriculum. Kaleli writes “individualized exercises and repetitions performed both in online instruction practices and in the implementation of the current curriculum led to a significant increase in students’ achievement in piano playing skills in the experimental group.”²⁷

Academic Achievement in Online Education

Academic achievement is one major method of determining the effectiveness of online music education. In *COVID-19 and Online Learning: Critical Insights for Academic Achievements*, Soleman Mozammel writes “academic achievement is defined concerning the communicative (oral, reading, writing), and thinking skills and competencies (with regards to the subject matters of mathematics, science, and social science) that enable a student to succeed in school and, later on, in society.”²⁸

As there are many recent studies on the effects of mandated online education during the lockdown becoming available, there is still a lack of studies in how these mandates affected the benefits of music education for students. Studies have shown that music helps students to express

²⁷ Y. S. Kaleli, “The Effect of Individualized Online Instruction on TPACK Skills and Achievement in Piano Lessons,” *International Journal of Technology in Education (IJTE)*, 4(3), (2021): 399-412, <https://doi.org/10.46328/ijte.143>.

²⁸ Soleman Mozammel, Umair Ahmed, and Nawal Shakar, “COVID-19 and Online Learning: Critical Insights for Academic Achievements,” *Elementary Education Online* 20, no. 4, (2021): 1454, accessed July 2023, 10.17051/ilkonline.2021.04.166.

themselves and develop confidence in traditional music classes. This is an important finding to focus on for analyzing the effectiveness of online music education. Mozammel remarks:

These studies have suggested that when students are confident of their abilities to overcome certain challenges and strive to achieve goals, it helps them to boost their performance targets. Therefore, with the ongoing COVID-19 situation whereby the learning is taking place online, it becomes important for students to express IT self-efficacy in order to secure their academic achievement.²⁹

Multiple studies show that developing an online music education curriculum that is student-centered can be successful for developing academic achievement. Carol Johnson writes in *A Framework for Teaching Music Online* that “when thinking of authenticity in terms of teaching music online, there is a need to effectively thread together the student learning experience, learning content and approach as well as teaching approach (e.g., teaching strategies, assessments, approaches to feedback) across the entire learning experience.”³⁰ This suggests that curriculum needs to be tailored to individual students in online courses for greater academic achievement.

In *The Influence of Online Learning on Students’ Academic Achievement*, Gat Cooper has corroborated the effectiveness of online education for academic achievement in Indonesian universities when collaborative learning is also involved. Gat Cooper writes that “this study has evidenced that the Students’ Academic Achievement can be accomplished through the assessment of collaborative learning. The learning process in a virtual classroom group has demonstrated the increase of students' academic achievement. The teaching-learning enterprise

²⁹ Soleman Mozammel, Umair Ahmed, and Nawal Shakar, “COVID-19 and Online Learning: Critical Insights for Academic Achievements,” *Elementary Education Online* 20, no. 4, (2021): 1454, accessed July 2023, 10.17051/ilkonline.2021.04.166. 1452.

³⁰ Carol Johnson, *A Framework for Teaching Music Online*, (United Kingdom: Bloomsbury Publishing, 2022), 2.

becomes more active and student-centered.”³¹

Even though technology becomes more advanced and available for students, academic achievement in online music education faces some new challenges. Not all online education programs have been able to be student-centered or fully collaborative. Kathleen Schnerer writes in *Motivating Orchestra Students During the Pandemic* that “One trend we are observing is that many school orchestra teachers—regardless of whether they are in fully online, hybrid, or in-person scenarios—are seeing their students less often during the pandemic due to scheduling adjustments.”³²

Some teachers and organizations were not prepared for the sudden change to online education during the lockdown. This led to a lower standard of music education in some programs because of the lack of preparation or resources. One example noted by Juan Ignacio Pozo in *Teaching and Learning Musical Instruments through ICT: the Impact of the COVID-19 Pandemic Lockdown*, is how students have not been taught to develop their own understandings of the material taught. Pozo writes:

The practices utilized during the critical incident of the COVID-19 pandemic have been limited to repeating and even simplifying traditional conceptions in which the teacher conveys knowledge to the student so that the student may reproduce or imitate it. It appears that this critical incident has failed to act as an impetus to reconstruct practices.³³

³¹ Gat Cooper, Edi Abdurahman, Dezie Warganegara, and Wibowo Kosasih, “The Influence of Online Learning on Students’ Academic Achievement: Mediated by Collaborative Learning,” *International Journal of Advanced Trends in Computer Science and Engineering* 10, (2021): 160, accessed on July 2023, 10.30534/ijatcse/2021/211012021.

³² Kathleen Schnerer and Michael Hopkins, “Motivating Orchestra Students During the Pandemic,” *American String Teacher*, Vol. 71, No. 1, (February 2021): 11, accessed on March 2023, doi://10.1177/0003131320977358.

³³ Juan Ignacio Pozo, María-Puy Perez Echeverría, Amalia Casas-Mas, Guadalupe Lopez-Iniguez, Beatriz Cabellos, Elisa Mendez, Jose Antonio Torrado, and Lucas Ba~no, “Teaching and Learning Musical Instruments through ICT: the Impact of the COVID-19 Pandemic Lockdown,” *Heliyon* 8 (2022): 8, accessed on June 2023, e08761.

Many students and families were not prepared for a sudden change to online education as they do not live in a school-like environment. This method of education was not inclusive because not everyone has access to the same technologies and thus negatively affected academic achievement. In *Music Student's Approach to the Forced Use of Remote Performance Assessments*, Laura Ritchie writes that a "Student's choice to defer or submit the assessment during Lockdown was influenced by a range of forced factors, such as adaptations required by online teaching, limitations of rehearsal in their home environment, and the challenges in facilitating and recording their own assessments."³⁴

Section II: The Problems with Online Instrumental Music Education

One of the most significant negative effects of the lockdowns was the seclusion many people felt. Christine Kinsella writes that "Perhaps the most significant limitation of online music-making from a sociological perspective is the concept of digital poverty, or digital exclusion, and the contribution to social capital."³⁵ Not everyone had the same accessibility to online education during the lockdowns which impacted the quality of education for various students.

Based on a study in the United Kingdom on communal music-making during the lockdowns, Mihailovic writes that "Successful implementation of teaching first requires provision of adequate technical conditions (a good Internet connection, good quality of

³⁴ Laura Ritchie and Benjamin T. Sharpe, "Music Student's Approach to the Forced Use of Remote Performance Assessments," *Frontiers in Psychology* 12, 641667 (2021): 1, accessed on May 2023, Doi://10.3389/fpsyg.2021.641667.

³⁵ Christine Kinsella, "The Impact of COVID-19 Lockdown Restrictions on Community Music-Making in the UK" *Journal of Music, Health, and Wellbeing* (Autumn, 2021): 6, accessed on December 2022, www.musicealthandwellbeing.co.uk.

reproduction devices, good quality of loudspeakers, etc.) where, unlike in regular teaching, educators face limitations set by the capacity of their own technical devices on the one hand and by the capacity of the devices used by the students attending online teaching on the other.”³⁶

There are many challenges that the modern instrumental music educator faces today. In a review by Carol Johnson, she states that “it is understood that the availability of an online learning platform for music faculty does not equate with a singular pedagogical understanding of how to design or teach music in the online environment.”³⁷

In a recent research project *Becoming an Online Teacher: A Study in Self-Guided Professional Development* by Scott Hughes, Hughes found that “for music teachers, the lack of real-time, social interaction made it impossible to use pedagogically proven or even developmentally appropriate teaching practices ... Instead, teleconferencing music teachers were tasked with creating limited, alternative ways to provide standards-based music experiences for their remote-learning students.”³⁸

The lockdown forced some teachers and students to rely on technology alone for education. An ethnographic study in two schools in London proposes that technology used in music education can be a useful tool when combined with other techniques. The author believes that technology should not be used in isolation (using only YouTube for teaching, etc.) alone.

³⁶ Danijela Zdravic Mihailovic, “Aesthetic Education and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online?” *Facta Universitatis, Series: Philosophy, Sociology, Psychology and History* Vol. 20, No 1, (2021): 91, accessed on January 2023, <https://doi.org/10.22190/FUPSPH2101087Z>.

³⁷ Carol Johnson, “Teaching Music Online: Changing Pedagogical Approach When Moving to the Online Environment” *London Review of Education Volume 15, Number 3*, (November 2017): 452, accessed March 2023, DOI: <https://doi.org/10.18546/LRE.15.3.08>.

³⁸ Scott Hughes, “Becoming an Online Teacher: A Study in Self-Guided Professional Development,” *Lessons from Global Classrooms*, Vol. 1, (2022): 2.

Dan Stowell writes that “Heavy reliance on a single provider does bring dangers, such as being dependent on the availability and the whims of that provider. This is true even if the provision is not through direct purchase.”³⁹

Many teachers had a difficult time implementing their current curriculum into a 100% online education format. In *Finnish Classroom Teacher Students' Experiences of the Music Online Course During the COVID Pandemic*, Katri-Helena Rautiainen writes that “The objects of this online course did not include the development of pedagogical skills in music teaching at all. Therefore, the materials and exercises related to this topic were missing from the course platform.”⁴⁰ M. Ismail also noted in *From Physical to Virtual: A New Learning Norm in Music Education for Gifted Students* that:

Without a proper education strategy, gifted students are more prone to feeling bored and tend to withdraw from music class. This may greatly impact their emotions, making them vulnerable to depression, burnout, and even suicidal thoughts...In developing music distance learning, key activities such as virtual instruction, online tasks, and virtual discussions could be implemented to ensure learning effectiveness.⁴¹

A study in 2020 by David Lyman details the struggles teachers have had with having to shift their programs online with little warning. Many teachers are optimistic, but some say they cannot teach virtually and find other socially distancing methods. Lyman writes that “for

³⁹ Dan Stowell and Simon Dixon, "Integration of Informal Music Technologies in Secondary School Music Lessons," *British Journal of Music Education*, (2014): 16.

⁴⁰ Katri-Helena Rautiainen and Mikko Vesisenaho, "Finnish Classroom Teacher Students' Experiences of the Music Online Course During the COVID Pandemic," *Visions of Research in Music Education*, Vol. 39, Article 4, (2022): 18, accessed September 2023, <https://opencommons.uconn.edu/vrme/vol39/iss1/4>.

⁴¹ M. Ismail, A. Anuar, and F. Loo, “From Physical to Virtual: A New Learning Norm in Music Education for Gifted Students,” *International Review of Research in Open and Distributed Learning*, 23(2), (2022): 57-58, accessed June 2023, <https://doi.org/10.19173/irrodl.v23i2.5615>.

teachers of other instruments – particularly voice and other wind instruments – there are other health-related hoops to jump through that are likely to make the return to an instructor’s studio much farther off.”⁴²

In addition to limited time to change curriculum, teachers had to deal with the issues of technological failure when delivering education online. In the research study *Online Music Education in the Era of COVID-19: Teaching Instruments in Public Music Secondary Schools of Greece*, Aristeidis Apostolis discovered:

The majority of teachers who delivered online lessons of music instruments adopted a blended method that combined synchronous and asynchronous teaching. Most of these teachers used synchronous collaboration to communicate with their students, while, at the same time, they exchanged video and audio recordings, which is a form of asynchronous teaching. The main reason why teachers resorted to this combination was because of a series of technical problems that occurred when they tried to perform live during video calls.⁴³

These issues combined can have a detrimental effect on the morale and readiness of teachers. A recent study in Turkey highlighted in *The International Journal of Technology in Education* describes the changes in education for music teachers during the pandemic. Kibici and Sarikaya found that some teachers did not openly embrace the sudden changes needed to teach online. Kibici and Sarikaya found that “significant differences were found in terms of gender,

⁴² David Lyman, “Music Teaching in the Time of Coronavirus,” *Movers and Makers Cincinnati*, (July 10, 2020): accessed July 2023, <https://moversmakers.org/2020/07/10/music-teaching-in-the-time-of-coronavirus/>.

⁴³ Aristeidis Apostolis, “Online Music Education in the Era of Covid-19: Teaching Instruments in Public Music Secondary Schools of Greece During the 2020 Lockdown,” *International Conference on Studies in Education and Social Sciences* 3, 1-9, (December 2020): 7-8.

professional seniority and the type of school they worked at. In general, there are problems in music teachers' readiness to learn."⁴⁴

There are some facets of music education that cannot be translated into a complete online format. A study by Christopher Vongvithayamathakul found that:

Depending on national, local, and institutional regulations, ensemble conductors were forced to drastically alter their teaching of ensemble and conducting classes. Many of these classes had to move fully online for an extended period. Courses which relied on live, real-time interaction were nearly impossible to replicate in a virtual environment where latency is a significant detrimental factor. Some universities were able to continue ensemble activities with strict personnel, masking, distancing, and duration regulations. These requirements hindered conducting and performance practice in a number of ways: conductors could not effectively use facial expressions, greater distances made visual communication more difficult, and musicians had a harder time listening to other players when spaced very far apart.⁴⁵

Sonia Price also noticed this teacher/student distance in online music education and writes in *Singing Group Leaders' Experiences of Online Singing Sessions during the COVID-19 Pandemic: A Rapid Survey* that the "limitations of the online platform were keenly felt, including a sense of disappointment that the face-to-face environment could not be adequately replicated, and the significant barriers that deter satisfactory engagement."⁴⁶

Many online music courses in some areas during the lockdown provided no opportunity for performances. The effects of the lack of performance have been found in *Aesthetic Education*

⁴⁴ Volkan Kibici and Muhsin Sarikaya, "Readiness Levels of Music Teachers for Online Learning During the COVID 19 Pandemic," *International Journal of Technology in Education (IJTE)*, Vol. 4, No. 3, (2021): 510, accessed June 2023, <https://doi.org/10.46328/ijte.192>.

⁴⁵ Christopher Vongvithayamathakul, "Online-based Collegiate Wind Conducting Pedagogy in the Pandemic Era," diss. 2022, 2.

⁴⁶ Sonia Price, Jes Phillips, Jacqueline Tallent, and Stephen Clift, "Singing Group Leaders' Experiences of Online Singing Sessions during the COVID-19 Pandemic: A Rapid Survey," *Journal of Music, Health and Wellbeing*, (March 2021): 21, accessed March 2023, <https://repository.canterbury.ac.uk/item/8z588/singing-group-leaders-experiences-of-online-singing-sessions-during-the-covid-19-pandemic-a-rapid-survey>.

and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online? by Danijela Mihailovic:

The problem resulting from the lack of live performances with fellow students or professors, particularly in the field of solo performances or chamber music, as well as the inability to reach a full experience of music (“it is impossible to hear and experience everything in the proper way, because there is no face-to-face teaching”) stood out as a significant anomaly of online teaching.⁴⁷

The inherent distance given with online education along with the lack of performance opportunities affects the techniques that many music educators rely on. MD Ruscanda writes that:

For performance lessons, the teacher cannot correct the student’s posture or finger position in online lessons and cannot approach techniques such as playing pieces for piano using four hands, which are essential for demonstrating sound, rhythm, and phrasing, but are not adaptable to the virtual context. For the collective performance lessons, such as chamber music, string quartets, choirs, and orchestras, adapting to the online environment means losing the specificity of these disciplines, as this approach leads to loss of features of dynamicity, expressivity, and interactivity, all of which are crucial factors for enhancing students’ performance skills.⁴⁸

Meng-Meng Tang also notated this distance in vocal instruction in *College Vocal Music Teaching Design Based on Internet Platform* and writes that “traditional vocal education also suffers from a lack of visual and intuitive understanding of students’ singing bodies, a lack of live performance opportunities, a lack of awareness of real voices, and a lack of objective

⁴⁷ Danijela Zdravic Mihailovic, “Aesthetic Education and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online?” *Facta Universitatis, Series: Philosophy, Sociology, Psychology and History*, Vol. 20, No 1, (2021): 94, accessed March 2023, <https://doi.org/10.22190/FUPSPH2101087Z>.

⁴⁸ MD Rucsanda, A Belibou A-M Cazan, “Students’ Attitudes Toward Online Music Education During the COVID 19 Lockdown,” *Frontiers in Psychology*, Vol. 12, (2021): 3, accessed May 2023, doi: 10.3389/fpsyg.2021.753785.

impressions of performances.”⁴⁹

The internet and online communities helped to continue education and socialization during the lockdowns. In *The Impact of COVID-19 Lockdown Restrictions on Community Music-Making in the UK*, Christine Kinsella writes that “Creating such online communities allows for connection where there may not be any other option, but it can also overlook the importance of in-person human contact, particularly in music-making scenarios.”⁵⁰

Section III: The Advantages of Online Instrumental Music Education

There are some notable achievements in technology that have increased the availability of instrumental music education to those who might otherwise not have it. The internet and online communities helped people to socialize and continue education during the lockdown. Sonja Price writes that “New skills, both practical and personal, were acquired, and the online experience proved a significant therapeutic environment for maintaining the sense of community and identity that group leaders and members cherish. From a purely musical perspective, it is evident that sadness and frustration clouded some group leaders’ impressions of the value of their contribution.”⁵¹ John Finney writes in *Music Education with Digital Technology* that “Access to

⁴⁹ Meng-Meng Tang, “College Vocal Music Teaching Design Based on Internet Platform,” *Wireless Communications and Mobile Computing*, Vol. 2022, (June 2022): 2, accessed March 2023, <https://doi.org/10.1155/2022/3590597>.

⁵⁰ Christine Kinsella, “The Impact of COVID-19 Lockdown Restrictions on Community Music-Making in the UK,” *Journal of Music, Health, and Wellbeing*, (Autumn 2021): 7, accessed July 2023, www.musichealthandwellbeing.co.uk.

⁵¹ Sonia Price, Jes Phillips, Jacqueline Tallent, and Stephen Clift, “Singing Group Leaders’ Experiences of Online Singing Sessions during the COVID-19 Pandemic: A Rapid Survey,” *Journal of Music, Health and Wellbeing*, (2021): 21.

music technologies brings the potential to ensure self-realization and the realization of social solidarities and group identities.”⁵²

Alana Blackburn discusses the positive impact an online music education course can have on students. In *Performing Online: Approaches to Teaching Performance Studies in Higher Education Within a Fully Online Environment*, Blackburn found that “This survey has revealed that there are methods to music performance teaching that can encourage students to take more control of their own learning while developing meta-skills they do not necessarily achieve with a master-protégé training.”⁵³

In *Online Learning in Higher Music Education: Benefits, Challenges and Drawbacks of One-to-One Videoconference Instrumental Lessons*, Ana Martinez Hernandez suggests approaches to overcome the limitations of online education. Hernandez writes “The problem with online lessons is that in higher music education high levels of instrumental proficiency are expected from the students, and these are more difficult to obtain through this method. A possibility that universities could easily implement would be a blended model of face to face with distance learning. This way, students would learn on campus what was deficient or lacking with the distance education.”⁵⁴

⁵² John Finney, *Music Education with Digital Technology*, (United Kingdom: Bloomsbury Publishing, 2007) 2.

⁵³ A. Blackburn, “Performing Online: Approaches to Teaching Performance Studies in Higher Education Within a Fully Online Environment,” *Australian Journal of Music Education*, Vol. 51, No. 1, (2017): 70.

⁵⁴ Ana Martinez-Hernandez, “Online Learning in Higher Music Education: Benefits, Challenges and Drawbacks of One-to-One VideoConference Instrumental Lessons,” *Journal of Music, Technology & Education*, Vol. 13, No. 2&3, (2021): 12, accessed June 2023, https://doi.org/10.1386/jmte_00022_1.

In *Music Learning and New Media in Virtual and Online Environments*, S. Alex

Ruthmann and David G. Hebert explore qualities of virtuality in online and blended music learning. They write:

A rationale for moving music education from the in-person to the virtual and online is the increasingly widespread understanding that through globalization all nations have become more intricately connected and one can no longer question whether one can be considered fully educated in a field such as music if one knows nothing of the musical practices in the other 70% of the world.⁵⁵

The vast amount of information available on the internet is available for students and teachers alike due to the push for online education. Renee Crawford suggests using a blended approach to help with implementing online education. Crawford writes in *Rethinking Teaching and Learning Pedagogy for Education in the Twenty-First Century: Blended Learning in Music Education* “In response to this economy driven shift in thinking and finding a way to enhance music education for young people, there is an increasing number of high-quality online resources and applications available to teachers and students.”⁵⁶

Technologies are beginning to address the many shortcomings of distance learning. Online instrumental music education has given teachers, students, and performers new arenas for professional and personal development. Students and teachers can now study in real time from anywhere in the world. Puput Irfansyah writes that “learning and music can be developed from the mobile technology aspect which is used to build interaction between students and teachers in

⁵⁵ Alex Ruthmann and David Hebert, “Music Learning and New Media in Virtual and Online Environments,” *Oxford University Press*, Vol. 2, (2012): 1.

⁵⁶ Renee Crawford, “Rethinking Teaching and Learning Pedagogy for Education in the Twenty-First Century: Blended Learning in Music Education,” *Music Education Research*, (2016): 2, accessed June 2023, DOI: 10.1080/14613808.2016.1202223.

their learning music process and evaluation. Students do not only get the skills of how to play music but also to increase their social skills, socializing in the building of soft skill.”⁵⁷

Mobile devices in addition to local networks were instrumental in continuing education during the lockdowns. Ozlem Kilincer found that technological devices and software helped to provide teachers more solutions. Kilincer writes “We see that distance education applications which arose as a result of technological advancements contribute positively to the solution of quantity and quality issues in subject area education, provided they are designed and implemented in a rational way.”⁵⁸

A recent study by Cheng Lam, *The Worst is Yet to Come: The Psychological Impact of COVID-19 on Hong Kong Music Teachers*, shows how the blended learning approach has helped some students pay attention compared to a complete absence of education. Lam writes:

Another possible positive change observed in the interviews concerned students’ attitudes towards music learning with teachers. The blended learning approach has drastically decreased the level of interaction between teachers and students. However, students have started to appreciate seeing their teachers’ faces and talking to them.⁵⁹

Jody Neal Blake writes in *Distance Learning Music Education* that “distance learning is quickly becoming the cornerstone of higher education in the United States. Over the past several

⁵⁷ Puput Irfansyah, Erlando Domi Sirait, and Aan Risdiana, “A Prototype of a Constructivist Application for Online Evaluation in Learning Music,” *Advances in Social Science, Education and Humanities Research*, Vol. 651, (2021): 223.

⁵⁸ Ozlem Kilincer, “An Investigation of Pre-Service Music Teachers’ Attitudes Towards Online Learning During the COVID-19 Pandemic,” *International Journal of Technology in Education and Science (IJTES)*, 5(4), (2021): 587-600, <https://doi.org/10.46328/ijtes.304>. 589.

⁵⁹ L. Cheng & C.Y. Lam, “The Worst is Yet to Come: The Psychological Impact of Covid-19 on Hong Kong Music Teachers,” *Music Education Research*, Vol. 23, No. 2, (2021): 18, accessed on June 2022, DOI: 10.1080/14613808.2021.1906215. 18.

decades, distance learning has created innovations, complications, and opportunities unimaginable in previous years.”⁶⁰ These innovations in technology are making online learning more effective and easier to use for teachers and students. Leonard Brooks discovered that “a program employing digital technologies can be designed, implemented, and evaluated to assist elementary teachers to introduce, increase, and/or improve music instruction for their students, particularly if they are not music specialists.”⁶¹

Computers in Music Education: Amplifying Musicality by Andrew Brown is a review of how computer technologies can aid music education. This book reviews issues with pedagogy, computer production, and curriculum development in online learning. This book also includes practical suggestions for implementing technology into music programs. Brown writes that “People are social beings and music making is a very social activity, so we can expect increased networked connectivity to significantly affect music education.”⁶²

Online instrumental music education also helps students learn technology. Ilana Lavy writes about online music instruction in *Learning Programming Fundamentals via Music* and how “it incorporates emotional aspects into the learning process and ‘softens’ the rigidity of the programming language. During the programming of a song, the need for the use of programming

⁶⁰ Jody Neal Blake, “Distance Learning Music Education,” *Journal of Online Higher Education* vol. 2, no. 3, (2018): 2.

⁶¹ Leonard Brooks, “Whacky Wizards: Designing and Assessing an Online Interactive Program for Elementary Music Education,” Diss. 2022, 218.

⁶² Andrew R. Brown, “Computers in Music Education: Amplifying Musicality,” (United Kingdom, Routledge, 2007) 313.

structures arises. The music provides concrete meaning to abstract concepts and thus helps the students internalize and understand them.”⁶³

One disadvantage of online education during the lockdowns is that many families did not have an environment in their house that created a setting like in school learning. This affected the focus and behavior of many students. As technology continues to improve, one solution currently being implemented is the use of virtual reality (VR) as educators are beginning to see the opportunities virtual learning can create. Veley writes in *Virtual Reality Challenges in Education and Training* that “VR training could provide participants with a higher level of realism and immersion in comparison to classroom instructions and web based educational material. However, VR scenarios still lack the direct hands-on experience and face-to-face interactions that real-life exercises provide.”⁶⁴

Summary

There are a few trends and patterns found in this review of recent studies and literature. The inclusion of a multitude of techniques and technologies to increase the effectiveness of online music education, sometimes because of the failure of technological aids and devices, has become more popular over time. Teachers and students have also benefited from the development of and quality of instant feedback.

Interpersonal development is a recurring theme in this review. Many teachers and

⁶³ Ilana Lavy, “Learning Programming Fundamentals via Music,” *International Journal of Information and Communication Technology Education*, Vol. 17, No. 2, (April-June 2021): 71.

⁶⁴ Dimiter Veley and Plamena Zlateva, "Virtual Reality Challenges in Education and Training," *International Journal of Learning and Teaching*, Vol. 3, no. 1 (2017): 36.

students have had varying amounts of success and failure with creating and performance based on distance education. The usage of distance learning has also given some teachers and students concern on the lack of synchrony between their playing and others.

There are debates, conflicts, and contradictions on the usage of technology and online music education. Many sources disagree on the level of inclusiveness available with online instrumental music education. There is also much debate on whether technology makes the educators job easier or more difficult.

The findings of this literature review will be used in comparison to my hypothesis and the data from the study. These findings and the research into the National Association for Music Education standards will help in the survey question design. The guidelines from the National Association of Music Merchants⁶⁵ are used in placing the questions into categories for further analysis.

⁶⁵ NAMM Foundation, "Supporting Music Education: Critical Factors for a Successful Program," (2023): 1-4, accessed March 2022, <https://www.nammfoundation.org/educator-tips/supporting-music-education-critical-factors-successful-program#legal-more>.

Chapter Three: Methods

Introduction

The purpose of this study was to discover the differences between online music education programs and traditional in school learning courses. Due to unforeseen events that could prohibit students from having any education otherwise available, online learning will continue to be utilized in the future and it is imperative that we discover ways to maximize its' potential for music education.

Design

The procedures for each participant group involve completing an online survey with an average time of five minutes. The survey questions are influenced by the articles 'Overview of the 2014 Standards' from the National Association for Music Education (NAFME) and 'Supporting Music Education: Critical Factors for a Successful Program' from the National Association for Music Merchants (NAMM).

NAFME states that:

The 2014 Music Standards are all about Music Literacy. The standards emphasize conceptual understanding in areas that reflect the actual processes in which musicians engage. The standards cultivate a student's ability to carry out the three Artistic Processes of Creating, Performing, and Responding. These are the processes that musicians have followed for generations, even as they connect through music to their selves and their societies... Students need to have experience in creating, to be successful musicians and to be successful 21st century citizens. Students need to perform – as singers, as instrumentalists, and in their lives and careers. Students need to respond to music, as well as to their culture, their community, and their colleagues.⁶⁶

The NAMM Foundation states "If you are looking to maintain, build or expand your

⁶⁶ <https://nafme.org/overview-of-2014-music-standards/>

music program, *Gaining the Arts Advantage: Lessons from Schools that Value Arts Education* examines 13 critical factors that influence successful arts programs.”⁶⁷ The critical factors that influence successful arts programs are the community, the school board, the superintendent, the district arts coordinator, a cadre of principals, the ‘teacher as artist,’ parent/public relations, an elementary foundation, opportunities for higher levels of achievement, national, state and outside forces, planning, and continuous improvement.

Questions and Hypotheses

A possible answer to the first research question is addressed in working Hypotheses 1:

RQ1: In what ways does the musical and academic development of music students who engage in 100% online learning differ from students in the classroom?

H1: Students who only engage in online learning for music and performance instruction may not achieve the same levels of musical and academic achievement as students in the classroom due to the differences in personal interaction with technology. Cavari writes that “a disconnect can be felt between performer and listener as the medium is a conduit and at times an obstacle for human connection, and creators must keep in mind that the musical production of virtual vocal ensembles is a solitary endeavor.”⁶⁸

Students, faculty, and parents report that the behavioral and social health is greater when

⁶⁷ <https://www.nammfoundation.org/educator-tips/supporting-music-education-critical-factors-successful-program>

⁶⁸ Christopher Cayari, “Virtual Vocal Ensembles and the Mediation of Performance on YouTube,” (PhD diss., University of Illinois at Urbana-Champaign, 2016), 383.

their student is in the classroom for music education instead of virtually. Online learning cannot fully replicate the social skills that music students develop in the classroom thus resulting in diminished levels of musical and academic achievement.

A possible answer to the second research question is addressed in working Hypotheses 2:

RQ2: What are some teaching techniques in music education that could be implemented in online education to ease greater musical and academic achievement?

H2: Some techniques that can be implemented in online education to help musical and academic achievement in music education could be increasing synchronous live instruction, involve the use of the other senses, increase movement and handwriting, and organization of online course material. If students engage only in online education for music education instruction and performance, some techniques and technological developments will need to be made to existing programs to ease the students' social development based on current research in the field. Perry writes that "in examining how we teach our students through music; we see today's music industry and our ensemble classroom activities have become increasingly disconnected."⁶⁹

Participants

Teachers, administrators, parents, and students who have engaged in an online music education program in the last three years will be questioned about the effectiveness of online/virtual music education programs. Participants who meet the criteria for the study based on a screening survey will answer a questionnaire to be used for evaluation. Participants must be

⁶⁹ Peter J. Perry, "Technology Tips for Ensemble Teachers," (United Kingdom: Oxford University Press, 2019) 3.

at least 18 years old, were themselves or had a child engaged in online music education in the last three years and/or was a teacher or supervisor. I have excluded participants under the age of 18 and those who do not pass the screening survey. Participants must have been somewhat involved in an online music education program within the last three years.

Recruitment for participants involved sending online posts and emails including the information for the study in social media and music education online forums with a focus on music education in the last three years. The posts were also sent to relevant school social media groups. The goals of this study will be defined at the beginning of the study, and the researcher will communicate the value of the questionnaire with the purpose, the plan for the data, and how the results will supply information for future studies of online music education.

Setting

The setting for this research was conducted wherever the participants chose to complete the survey at, during a time of their own choosing between December 2022- April 2023. The participants were required to use a device (tablet, phone, computer, etc.) that connects to the internet to participate in the study.

Instrumentation

The instrumentation for this study consists of a structured questionnaire comprised of specific questions that limit responses from the participants. This is suitable for this study as it collects responses from numerous people from various locations and backgrounds. These can be administered easily through email and direct link. The survey and data collection are done utilizing Google Forms. The data from Google Forms will be compared using analysis software.

Procedures

This study will use a convergent mixed methods design that combines quantitative and qualitative data to be analyzed separately to see if the findings confirm each other. I will analyze the qualitative database by coding the data and placing these codes into themes. This study utilizes a measurement tool known as a 5-point Likert type (1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree) to obtain data from the survey. I will analyze the quantitative data as statistical results and then integrate the two databases. Special consideration will be used in addressing participant variables (variations in age and profession) in a quasi-experimental design comparing the findings from parents, teachers, and students from different social and educational backgrounds for privacy concerns. The system of assessment for this project consists of comparing the data available from research, assessments, and surveys with the findings of this project. The strengths and weaknesses of online music education programs attributed to this study will be shown through this mixed methods research study.

Data Analysis

All surveys will remain anonymous, and all data collected will be stored on an encrypted drive. The researchers were the only ones with access to the data, which will not be stored for no longer than three years. The only information gathered from the chart was the musical and academic achievements obtained by K-12 students engaged in online music education during the Covid-19 lockdowns.

Summary

This study researches the differences between online music education programs and traditional in school learning courses. The survey explores how parents, teachers, and students received online music education during the lockdowns. The questions are selected to verify musical and academic achievement in the areas of creating, performing, responding, the community, planning, and school board involvement. The responses, with proper analysis, will determine the success of the online programs the participants were involved in. The following chapter provides the research findings for this study.

A total of 40 people who are current or former teachers, students, and/or parents took part in an online survey offered by open invitation on online music education forums and email solicitation from January to May 2023. Everyone who fit the inclusion criteria for the study based on their responses to the screening survey was included in the analysis. Everyone surveyed was a parent of a K-12 student, a teacher, or music education supervisor within the last three years. 87.5% of those surveyed are parents and/or teachers of students in an online music education program during this time. The results of this study will be reported and analyzed in chapter four.

Chapter Four: Research Findings

This chapter is split into two sections to show patterns in data analysis for the next chapter. Data from both sections will be used to discover relationships between the participants' responses and to correlate findings from the literature review. The questions will also be grouped together in similar categories. Section two applies this data into tables for analysis with the Likert scale and determines means for overall effectiveness and attitudes towards online music education during the lockdown.

Section I

Section one displays the findings in pie charts with percentages. The questions have been grouped into six categories: creating, performing, responding, the community, the school board, and planning.

Creating

Figure 1 displays the results when participants were asked about their success with creating in online music education. 35% reported that their online music programs helped students create and express their own musical ideas alone and in groups as seen on Figure 1.

3. Our virtual music programs helped students create and express their own musical ideas alone and in groups.

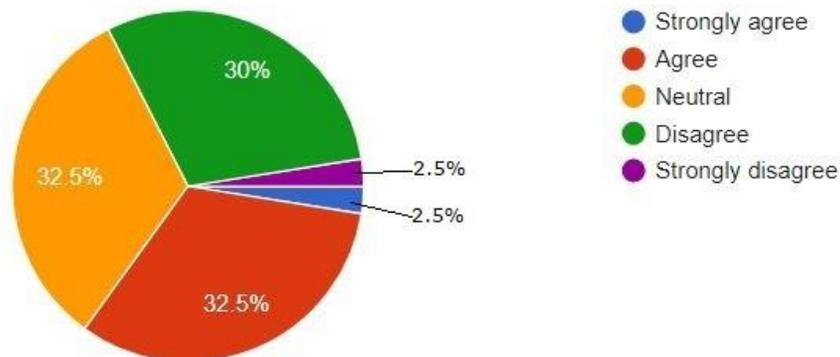


Figure 1. Effectiveness of Online Music Education Programs in Creating

Figure 2 displays the results when participants were asked about their programs providing a positive climate for learning. Figure 2 shows that 7.5% surveyed strongly agreed their online courses provided a positive climate for learning, with 50% choosing to agree.

6. Our virtual course provided a positive climate for learning.

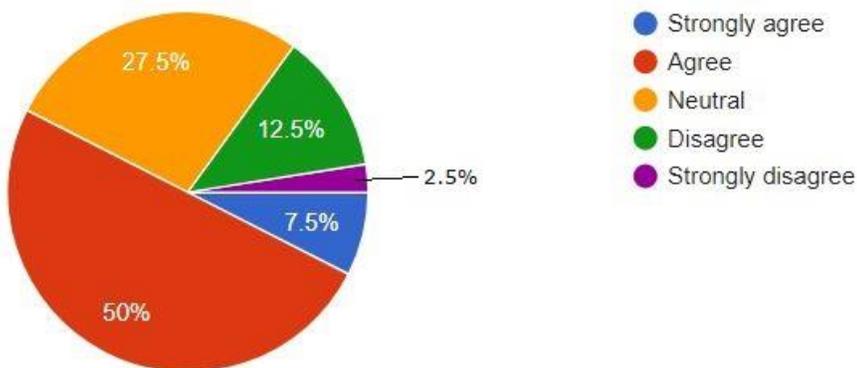


Figure 2. Online Music Education and Positive Climate

When asked if they or their students were able to incorporate digital technologies for

studying and music-making in an effective manner, 10% strongly agreed, 32.5% agreed, and 32.5% answered neutral to this question as seen on Figure 3.

7. I/my students was/were able to incorporate digital technologies for studying and music-making in an effective manner.

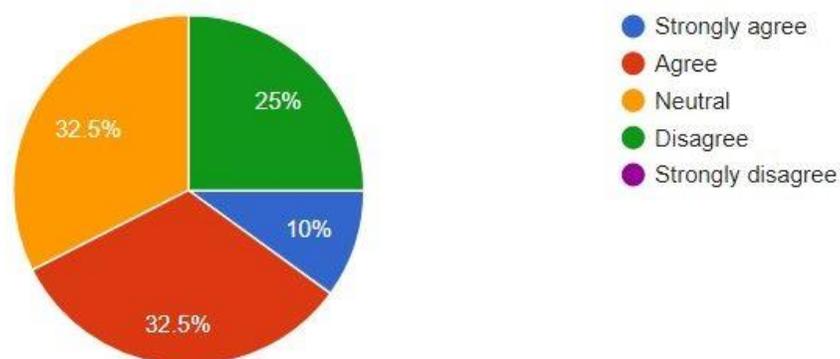


Figure 3. Incorporating Technology for Studying and Music-Making

Performing

Figure 4 displays the results when participants were asked about inclusivity in their online music education classes. 40% of those surveyed reported that their online music education courses are inclusive and allow all students an opportunity to participate with 12.5% strongly agreeing on Figure 4.

5. Our virtual music education courses are inclusive, allowing all students an opportunity to participate.

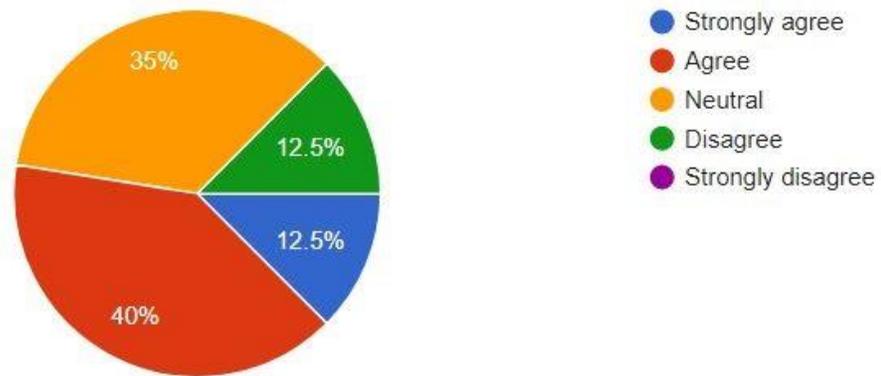


Figure 4. Inclusivity and Online Music Education

Figure 5 displays the results when participants were asked about the faculty involvement in community events. Figure 5 shows that 2.5% strongly agree that their music education courses encouraged and supported arts faculty involvement in community arts events. 52.5% responded neutral with 37.5% in disagreement.

11. Our music education courses encouraged and supported arts faculty involvement in community arts events.

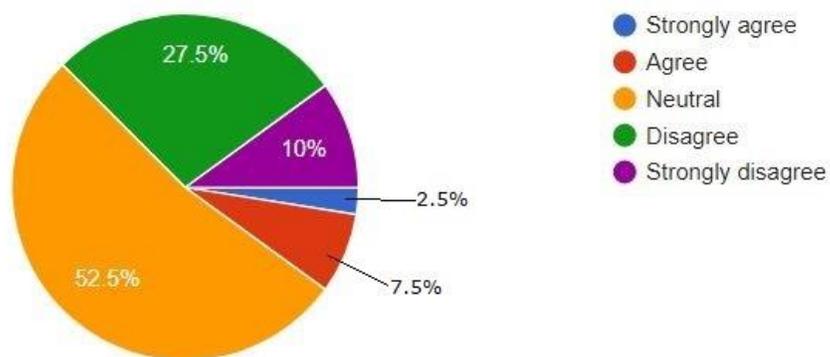


Figure 5. Faculty Involvement in Events During the COVID-19 Lockdowns

Figure 6 displays the results when participants were asked about student performance in online music education. 42.5% disagreed that their online music education courses encouraged and supported student exhibitions and performances for community audiences as seen on Figure 6, with 17.5% strongly disagreeing.

12. Our music education courses encouraged and supported student exhibitions and performances for community audiences.

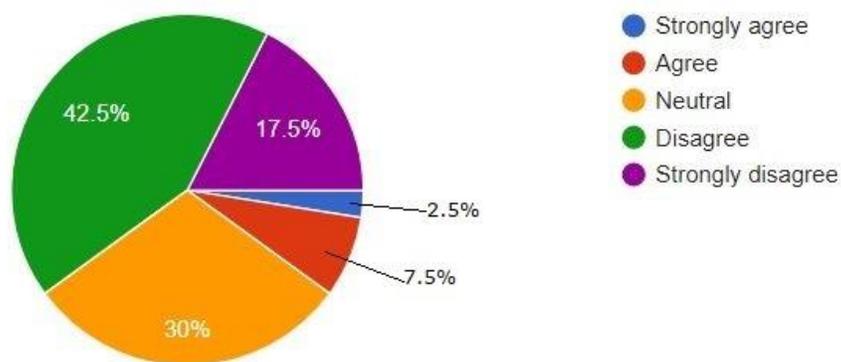


Figure 6. Student Performance Support During the COVID-19 Lockdowns

Figure 7 shows a near even split in the middle with the results about inspiration. When asked if their virtual music education courses create an environment of excellence that encourages both teachers and students to aspire to professional levels of performance, 55% surveyed responded with neutral while 20% agree and disagree as shown on Figure 7. 5% responded strongly disagreed.

16. Our virtual music education courses create an environment of excellence that encourages both teachers and students to aspire to professional levels of performance.

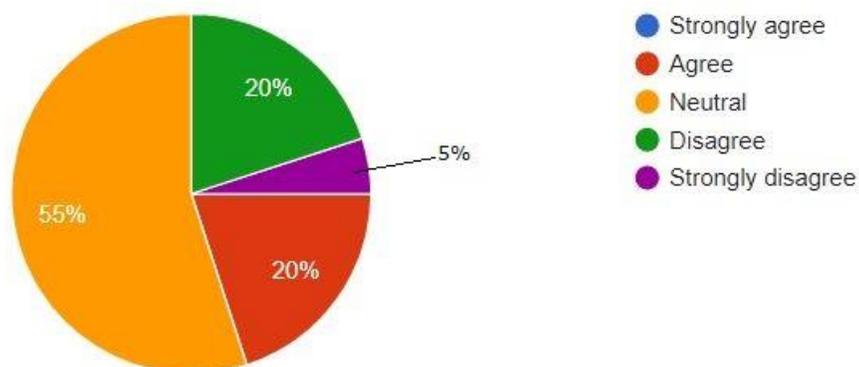


Figure 7. Online Environment and Encouraging Performance

Responding

Figure 8 displays the results when participants were asked about their success with musical achievement in online music education. 30% participants disagree that they or their students displayed overall improvement on their instrument after online music education courses on Figure 8. 37.5% responded neutrally with 22.5% agreeing.

1. Students displayed overall improvement on their instrument after online music education courses.

Figure 8

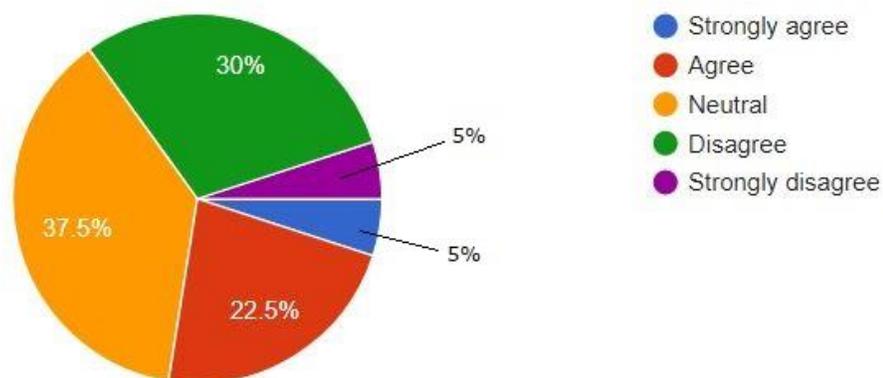


Figure 8. Online Music Education and Overall Improvement

Figure 9 displays the results when participants were asked about their success with developing aural skills in online music education. Figure 9 shows that 57.5% of those surveyed agree that their virtual music programs emphasized developing aural skills.

4. Our virtual music programs emphasize developing aural skills.

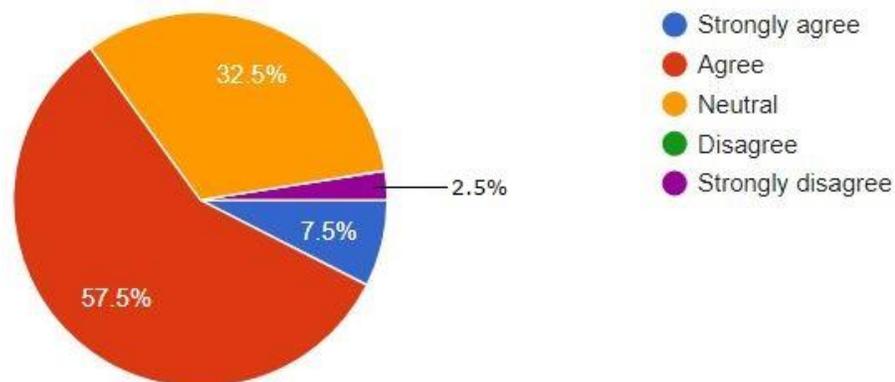


Figure 9. Online Music Education and Aural Skills Development

Figure 10 displays the results when participants were asked about teamwork development in online music education. 32.5% agreed that their online courses facilitated the development of positive interactions, teamwork, and problem solving as shown on Figure 10. 50% responded neutrally and 12.5% disagree that their courses facilitated development in these areas.

8. Our virtual programs facilitated the development of positive interactions, teamwork, and problem solving.

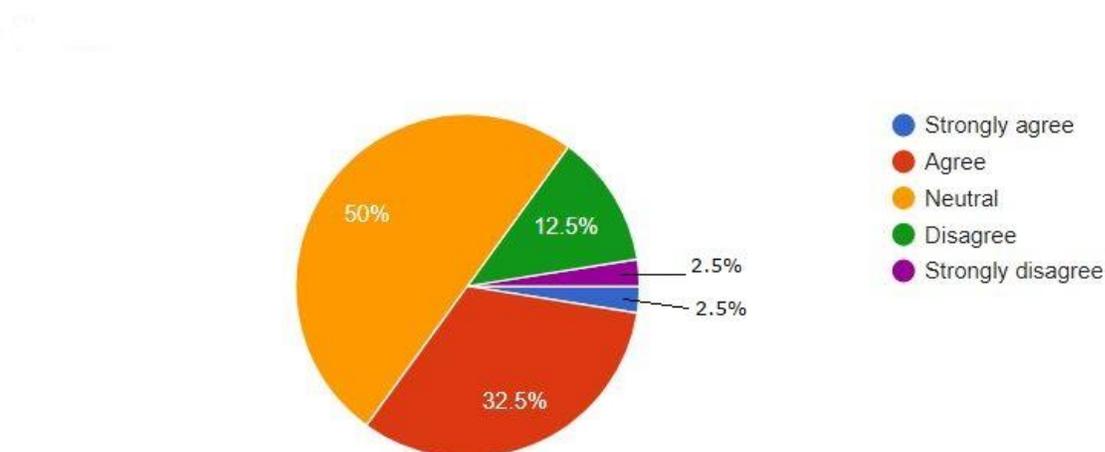


Figure 10. Online Music Education and Teamwork Development

Figure 11 displays the results when participants were asked about concentration in online music education. When asked if they have an easier time concentrating in online music courses than in person, 10% agree, 17.5% responded neutral, 42.5% disagree with 30% responding strongly disagree as seen on Figure 11.

9. I/my students have an easier time concentrating in online music courses than in person.

100%

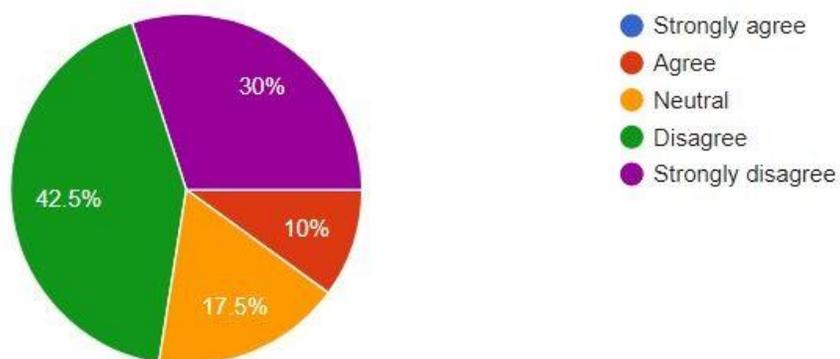


Figure 11. Online Music Courses and Concentration

Figure 12 displays the results when participants were asked about their responsibilities in learning in online music education. In the areas of intrinsic motivation and learning in online music education courses, Figure 12 shows that 45% agree and 40% responded neutrally that they are personally invested in and take ownership of their learning.

17. I/my students am/are personally invested in and take ownership of my/their learning.

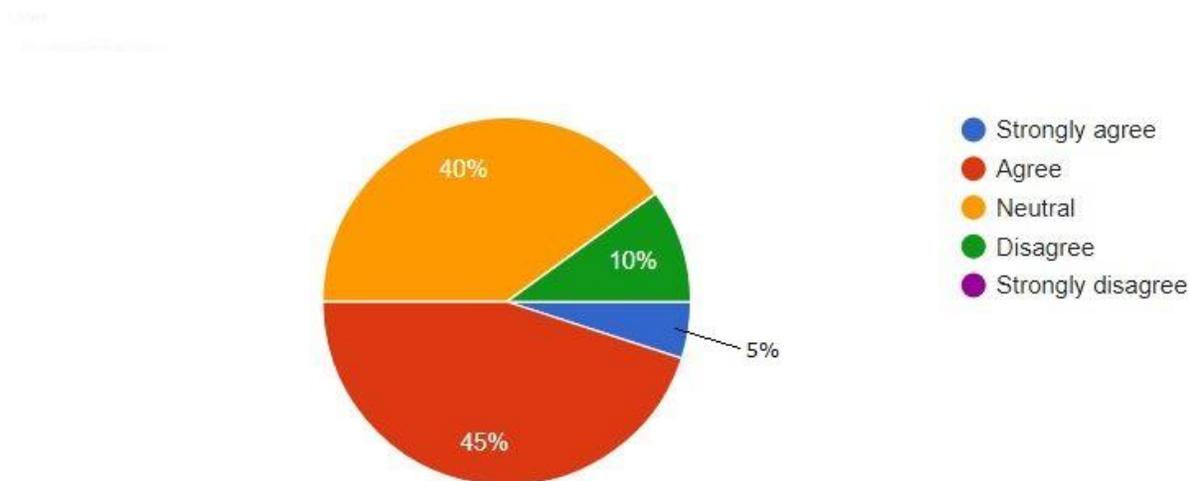


Figure 12. Intrinsic Motivation and Learning

Figure 13 displays the results when participants were asked about students' behavior after engaging in online music education. Figure 13 shows that 47.5% responded neutrally that students have improved behavior and a better positive identity after participating in online music education, with 27.5% responding that they disagree.

18. I/my students have improved behavior and a better positive identity after participating in online music education.

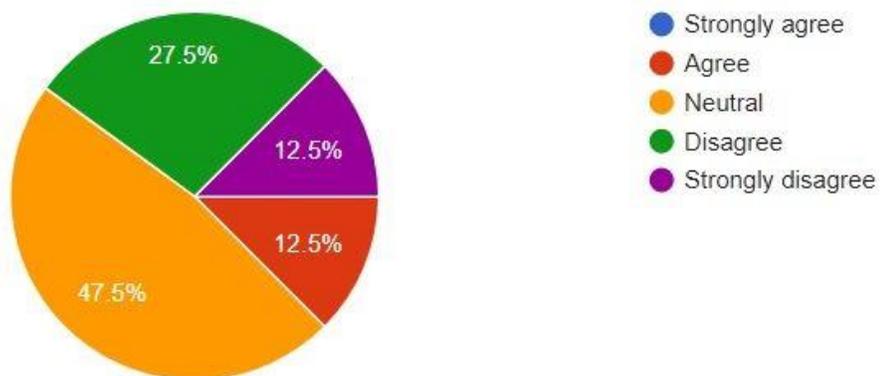


Figure 13. Student Behavior and Online Music Education

Figure 14 displays the results when participants were asked about academic achievement in online music education. 50% surveyed responded neutrally when asked if they achieved the outlined music learning outcomes of the program, with 40% in agreement on Figure 14.

22. I/my students achieved the outlined music learning outcomes of the virtual program.

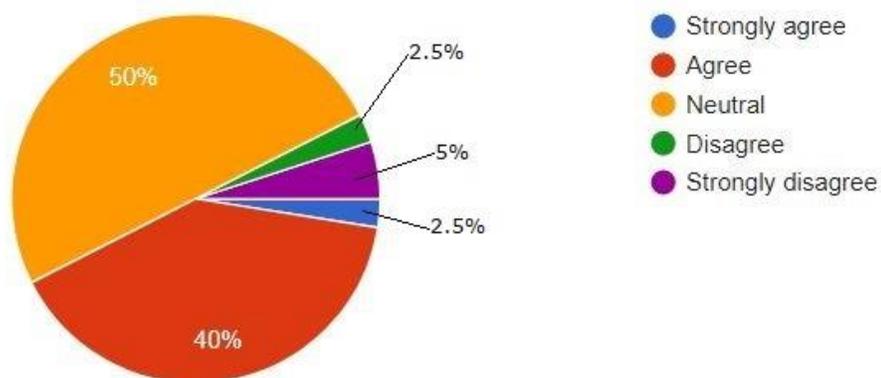


Figure 14. Outlined Musical Achievement in Online Music Education

The Community

Figure 15 displays the results when participants were asked about exposure in music in their online music programs. 50% reported they agree that their online music programs expose students to a diverse selection of musical traditions and styles from a variety of historic and social contexts as seen on Figure 15. 15% strongly agree with another 25% neutral and 7.5% in disagreement.

2. The virtual music education courses expose students to a diverse selection of musical traditions and styles from a variety of historic and social contexts.

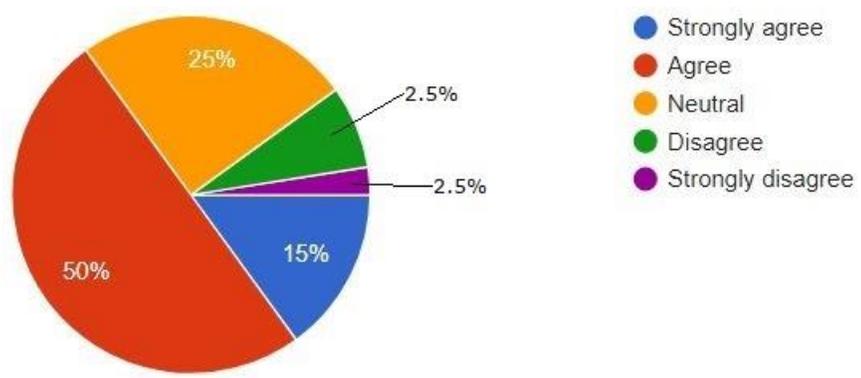


Figure 15. Communal Representation in Online Music Education

Figure 16 displays the results when participants were asked about parent and community involvement in their online music education programs. Figure 16 shows that 30% of those surveyed disagreed that their online courses encouraged and supported active parent and community involvement. 27.5% responded that they agreed that their programs supported parent and community involvement.

10. Our music education courses encouraged and supported active parent and community involvement.

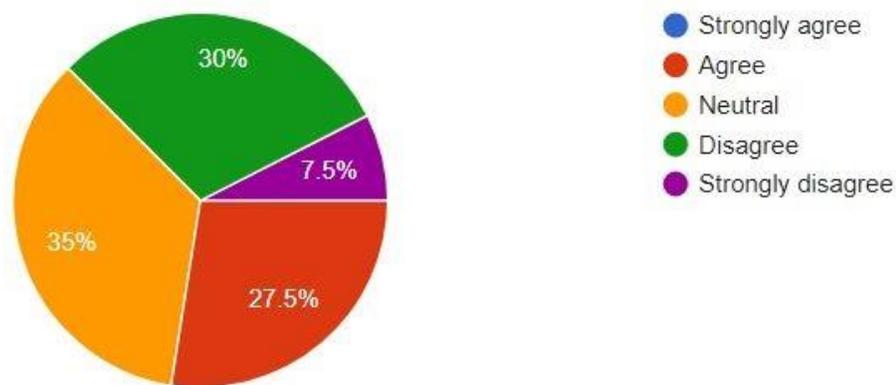


Figure 16. Parental and Community Involvement in Online Music Education

Figure 17 displays the results when participants were asked about community involvement in their online music education programs. When asked if the community was actively engaged within the schools and online music programs, 2.5% strongly agreed, 15% agreed, 37.5% disagreed, 10% strongly disagreed, and 35% answered neutral to this question as seen on Figure 17.

13. The community was actively engaged within the schools and the online music programs.

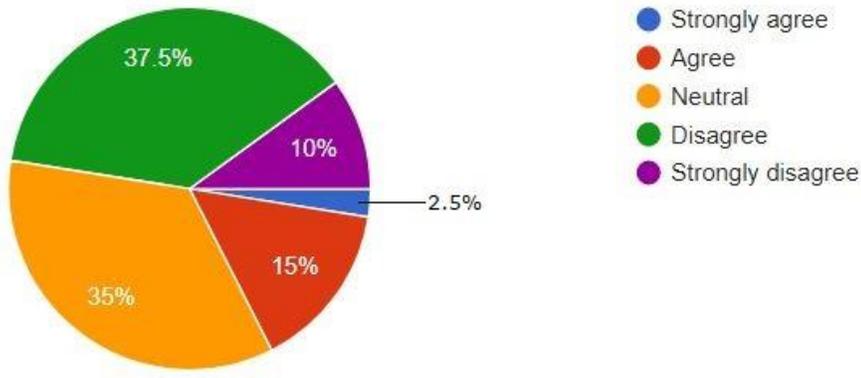


Figure 17. Community Engagement in Online Music Programs

The School Board

Figure 18 displays the results when participants were asked if they perceived that their programs were treated equally with other programs. 32.5% of those surveyed reported they disagree that their online music education was treated equally with other subject areas, with 15% strongly disagreeing on Figure 18. 27.5% responded neutrally and 25% agreed.

14. Our music education program was treated equally with other subject areas.

Figure 18

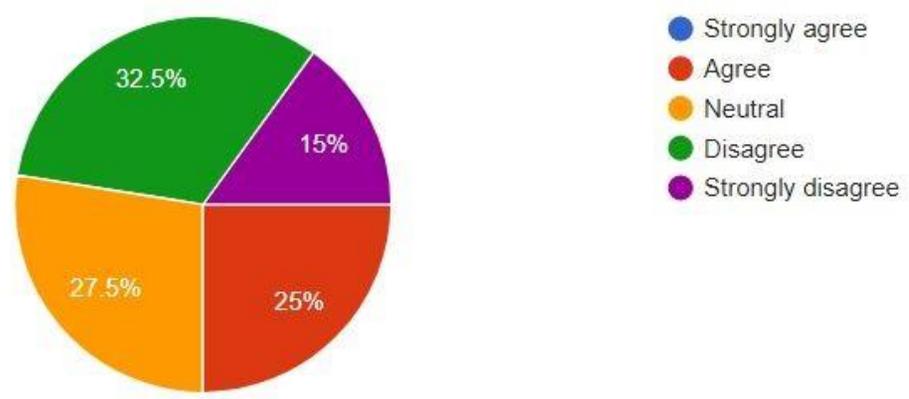


Figure 18. Online Music Education and Equal Treatment

Figure 19 displays the results when participants were asked about resource allocation for their online music education programs. Figure 19 shows that 55% are neutral that an adequate number of resources was allocated to facilitate their online music education courses. 20% agreed there was an adequate number of resources with 17.5% in disagreement.

15. An adequate amount of resources was allocated to facilitate our virtual music education courses.

100%

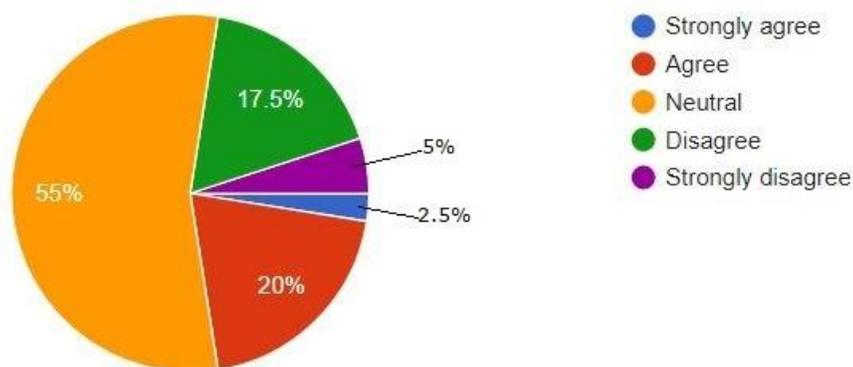


Figure 19. Resource Allocation for Online Music Education During the COVID -19 Lockdowns

Planning

Figure 20 displays the results when participants were asked if their online programs had a distinct plan. 30% of those surveyed reported that they agree that their music education courses have a comprehensive vision and implementation plan as seen on Figure 20. 7.5% strongly agreed and 47.5% responded neutrally. 12.5% disagreed when asked about a plan for their course.

19. Our music education courses have a comprehensive vision and implementation plan.

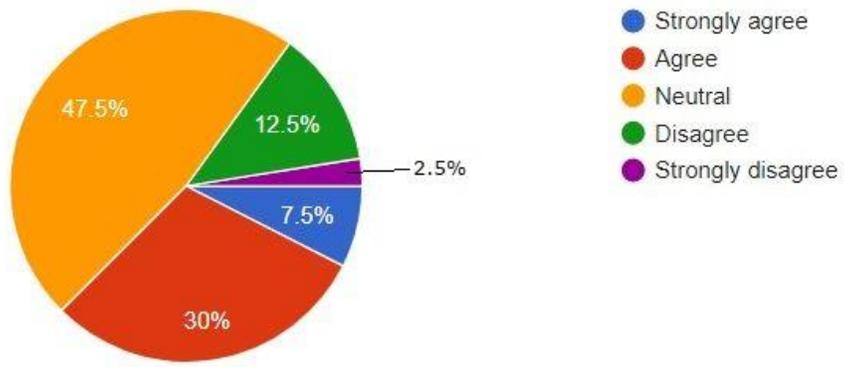


Figure 20. Online Music Education Planning

Figure 21 represents the responses for the statement ‘our online music education courses monitored student progress and provided feedback.’ The majority of those surveyed agreed with this statement at 52.5%, with 7.5% strongly agreeing. 25% responded neutrally with 12.5% in disagreement.

20. Our online music education courses monitored student progress and provided feedback.

100%

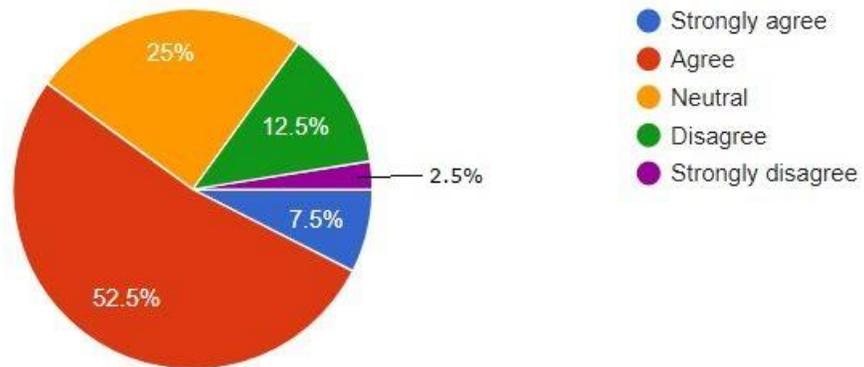


Figure 21. Online Music Education and Student Feedback

Figure 22 displays the results for the statement ‘our music education program has an appropriate student-to-teacher ratio.’ 37.5% of the respondents chose neutral as seen on Figure 22. 45% agreed with this statement with only 5% choosing strongly to agree and disagree.

21. Our music education program has an appropriate student-to-teacher ratio.

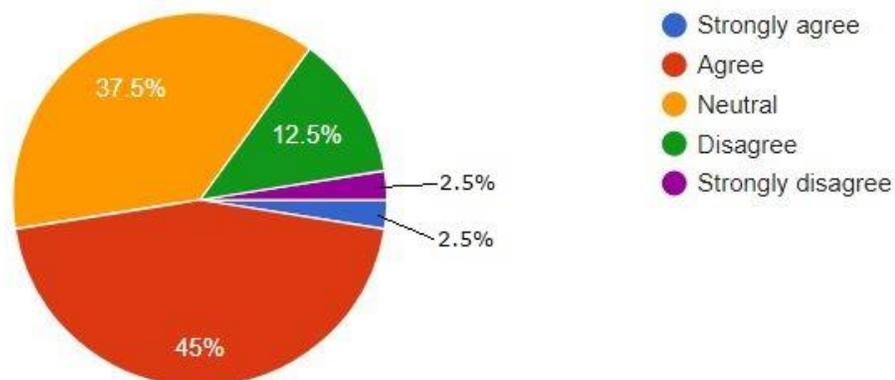


Figure 22. Online Music Programs and Student-to-Teacher Ratio During the COVID-19 Lockdowns

Section II

Section two is a compilation of results from using the Likert scale and combining the survey questions into relevant categories. These results will help determine the overall effectiveness of the online music education programs the participants were involved in during the lockdowns.

Table 1. Creating in Online Music Education During the Lockdowns

Survey Questions About Creating	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	Mean	Attitude
	#	%	#	%	#	%	#	%	#	%			
Our virtual music programs helped students create and express their own musical ideas alone and in groups.	1	2.5	12	30	13	32.5	13	32.5	1	2.5	125	3.1	Neutral
Our virtual course provided a positive climate for learning.	1	2.5	5	12.5	11	27.5	20	50	3	7.5	139	3.5	Positive
I/my students was/were able to incorporate digital technologies for studying and music-making in an effective manner.	0	0	10	25	13	32.5	13	32.5	4	10	135	3.4	Neutral
												3.3	Neutral

70

Table one shows that the participants of the study reported that their online music education courses provided a positive climate for learning. The participants disagreed on the effectiveness of online music education with incorporating digital technologies and creating musical ideas alone and in groups (mean score of 3.1 and 3.4 on a 5-point scale), resulting in a neutral/moderate attitude. This data suggests that the participants have a neutral/moderate overall attitude (with a mean score of 3.3) in creating in online music education during the lockdowns.

⁷⁰ Data from “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” study, Lafser, 2022-2023.

Table 2. Performing in Online Music Education During the Lockdowns

Survey Questions About Performing	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	Mean	Attitude
	#	%	#	%	#	%	#	%	#	%			
Our music education courses encouraged and supported arts faculty involvement in community arts events.	4	10	11	27.5	21	52.5	3	7.5	1	2.5	106	2.7	Neutral
Our music education courses encouraged and supported student exhibitions and performances for community audiences.	7	17.5	17	42.5	12	30	3	7.5	1	2.5	94	2.4	Negative
Our virtual music education courses create an environment of excellence that encourages both teachers and students to aspire to professional levels of performance.	2	5	8	20	22	55	8	20	0	0	116	2.9	Neutral
Our virtual music education courses are inclusive, allowing all students an opportunity to participate.	0	0	5	12.5	14	35	16	40	5	12.5	109	2.7	Neutral
												2.7	Neutral

71

Table two shows that the participants of the study reported a negative attitude towards the effectiveness of that their online music education courses provided regarding student exhibitions and performances for community audiences with an overall mean score of 2.4. The participants disagreed on the effectiveness of online music education with encouraging and supporting arts faculty in performance events and to aspire to professional levels of performance (mean score of 2.7 and 2.9 on a 5-point scale), resulting in a neutral/moderate attitude. This data suggests that the participants have a neutral/moderate overall attitude (with a mean score of 2.7) in performing in online music education during the lockdowns.

⁷¹ Data from “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” study, Lafser, 2022-2023.

Table 3. Responding in Online Music Education During the Lockdowns

Survey Questions About Responding	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	Mean	Attitude
	#	%	#	%	#	%	#	%	#	%			
Students displayed overall improvement on their instrument after online music education courses.	2	5	12	30	15	37.5	9	22.5	2	5	117	2.9	Neutral
Our virtual music programs emphasize developing aural skills.	1	2.5	0	0	13	32.5	23	57.5	3	7.5	147	3.7	Positive
Our virtual programs facilitated the development of positive interactions, teamwork, and problem solving.	1	2.5	5	12.5	20	50	13	32.5	1	2.5	128	3.2	Neutral
I/my students am/are personally invested in and take ownership of my/their learning.	12	30	17	42.5	7	17.5	4	10	0	0	83	2.1	Negative
I/my students have improved behavior and a better positive identity after participating in online music education.	0	0	4	10	16	40	18	45	2	5	138	3.5	Positive
I/my students have an easier time concentrating in online music courses than in person.	5	12.5	11	27.5	19	47.5	5	12.5	0	0	104	2.6	Neutral
I/my students achieved the outlined music learning outcomes of the virtual program.	2	5	1	2.5	20	50	16	40	1	2.5	133	3.3	Neutral
												3.0	Neutral

72

Table three shows that the participants of the study reported a negative attitude towards being personally invested in of their learning (with a mean score of 2.1). The participants disagreed on the effectiveness of online music education with four of the questions about responding (with mean scores of 2.9, 3.2, 2.6 and 3.3 on a 5-point scale), resulting in a neutral/moderate attitude. The participants overall responded with a positive attitude that their online music education programs emphasized developing aural skills as well as improved behavior and a better positive identity. This data suggests that the participants have a neutral/moderate overall attitude (with a mean score of 3.0) in responding in online music education during the lockdowns.

⁷² Data from “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” study, Lafser, 2022-2023.

Table 4. Community Engagement in Online Music Education During the Lockdowns

Survey Questions About the Community	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	Mean	Attitude
	#	%	#	%	#	%	#	%	#	%			
Our music education courses encouraged and supported active parent and community involvement.	1	2.5	3	7.5	10	25	20	50	6	15	147	3.7	Neutral
The community was actively engaged within the schools and the online music programs.	3	7.5	12	30	14	35	11	27.5	0	0	113	2.8	Neutral
The virtual music education courses expose students to a diverse selection of musical traditions and styles from a variety of historic and social contexts.	4	10	15	37.5	14	35	6	15	1	2.5	105	2.6	Neutral
												3.0	Neutral

73

Table four shows that the participants of the study reported a neutral/moderate attitude with survey questions about the community with an overall mean score of 3.0. The participants disagreed on the encouragement and support of community involvement, active engagement, and diverse materials in online music education (with mean scores of 3.7, 2.8 and 2.6 on a 5-point scale), resulting in a neutral/moderate attitude.

Table 5. The School Board and its' Effectiveness in Online Music Education During the Lockdowns

Survey Questions About the School Board	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	Mean	Attitude
	#	%	#	%	#	%	#	%	#	%			
Our music education program was treated equally with other subject areas.	6	15	13	32.5	11	27.5	10	25	0	0	105	2.6	Neutral
An adequate amount of resources was allocated to facilitate our virtual music education courses.	2	5	7	17.5	22	55	8	20	1	2.5	119	3.0	Neutral
												2.8	Neutral

74

Table five shows that the participants of the study reported an overall neutral/moderate

⁷³ Data from “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” study, Lafser, 2022-2023.

⁷⁴ Ibid.

attitude towards their online music education programs being treated equally with other subject areas (with a mean score of 2.6). Participants also disagreed on their views on whether an adequate number of resources was allocated to facilitate their courses (with a mean score of 3.0). This data suggests that the participants have a neutral/moderate overall attitude (with a mean score of 2.8) about the school board and its' effectiveness in online music education during the lockdowns.

Table 6. Planning of Online Music Education During the Lockdowns

Survey Questions About Planning	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Total	Mean	Attitude
	#	%	#	%	#	%	#	%	#	%			
Our music education courses have a comprehensive vision and implementation plan.	1	2.5	5	12.5	19	47.5	12	30	3	7.5	131	3.3	Neutral
Our online music education courses monitored student progress and provided feedback.	1	2.5	5	12.5	10	25	21	52.5	3	7.5	140	3.5	Neutral
Our music education program has an appropriate student-to-teacher ratio.	1	2.5	5	12.5	10	25	18	45	1	2.5	133	3.3	Neutral
												3.4	Neutral

75

Table six shows that the participants of the study reported an overall neutral/moderate attitude towards their online music education programs having a comprehensive vision and implementation plan (with a mean score of 3.3). Participants also disagreed on the appropriateness of the student-to-teacher ratio (with a mean score of 3.3). There was a positive attitude overall in the areas of monitored progress and provided feedback (with a mean score of 3.5). This data suggests that the participants have a neutral/moderate overall attitude (with a mean score of 3.4) about the planning of online music education during the lockdowns.

⁷⁵ Data from “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” study, Lafser, 2022-2023.

Summary

This survey was completed by 40 participants who fit the inclusion criteria based on their responses to the screening survey. The responses suggest that the participants varied in their opinions on the effectiveness of online music education during the lockdowns. Many figures show an even distribution of agree/disagree responses as well as many neutral/moderate responses.

The participants reported an overall moderate/neutral attitude towards their online music education programs with a mean score of 3.0. One participant mentioned that “As a parent, it was overwhelming trying to figure out how the different apps worked and websites. Very frustrating indeed.”

Another participant remarked “It is, or can be, extremely difficult to find a space to take an online music course that doesn’t disrupt the lives of others. Especially during COVID living in a small space with many people all of who had different goals and needs during the time.”

Many students and families were not prepared for a sudden change to online education as they do not live in a school-like environment. This method of education was not inclusive because not everyone has access to the same technologies and thus negatively affected academic achievement. In *Music Student’s Approach to the Forced Use of Remote Performance Assessments*, Laura Ritchie writes that a “Student’s choice to defer or submit the assessment during Lockdown was influenced by a range of forced factors, such as adaptations required by online teaching, limitations of rehearsal in their home environment, and the challenges in

facilitating and recording their own assessments.”⁷⁶

Another participant noted that “The music program had some fun segments where you created your own songs using websites with various digitally created sounds. Overall, there was no class time, it was all independent work and submitted online assignments. That was not ideal – there was no live verbal guidance from the music teacher, only recordings of directions for completing work.” These results will be analyzed and summarized in the following chapter.

⁷⁶ Laura Ritchie and Benjamin T. Sharpe, “Music Student’s Approach to the Forced Use of Remote Performance Assessments,” *Frontiers in Psychology* 12, 641667 (2021): 1, accessed on May 2023, [Doi://10.3389/fpsyg.2021.641667](https://doi.org/10.3389/fpsyg.2021.641667).

Chapter Five: Conclusion

This chapter provides a summary of the study, findings and prior research. This chapter will address the limitations of the study and offer recommendations for future study. The implications for practice are assessed and the chapter concludes with an overall summary of the project.

Summary of Study

This study provides recommendations for online music education curriculum development with an emphasis on improving the musical and academic achievement of the students to bridge the gap with students who study in the classroom. A continued study of the effects on music education and student development is imperative. Susan Hallam explains this importance of music education in *Music Education: The Role of Affect* with “group music making with peers deepens musical knowledge and understanding, and develops social and personal skills, resulting in considerable personal satisfaction and enhanced confidence.”⁷⁷ This study explores how successful online music education programs were during the COVID-19 lockdowns.

This qualitative research study examines in what ways music students who engage in 100% online learning differ from students in the classroom. An analysis of the findings determines the success of these programs based on key categories. Laura Ingerham writes that “the key to creating the authentic learning experience online is thus, and quite logically, a combination of tools and their proper use. As schools increasingly expand their online learning

⁷⁷ Susan Hallam, “Music Education: The Role of Affect,” In P. N. Juslin & J. A. Sloboda (Eds.), *Series in Affective Science, Handbook of Music and Emotion: Theory, Research, Applications*, (Oxford University Press, 2010,) 791.

offerings, it becomes more important than ever to examine the effectiveness of any online learning environment.”⁷⁸ This study reviews what techniques have been used in online education to teach and develop musical and academic achievement in music education. The research discovers in what ways in-classroom instruction for music compares to online instruction for music.

This project is an examination of relevant literature such as journal articles, books, theses, and dissertations written within the last ten years. This information is investigated by comparing studies for and against online learning as the only avenue of education. The differences in curriculum design between virtual instrumental courses and traditional classroom practices are examined with recommendations made based on these findings. Little writes in *Characteristics of Online Music Courses: A Survey of Music Faculty* that “if sustained acceptance in our culture is expected, then continued inquiry in online practices is warranted. Therefore, relative to online music courses, consideration of a holistic approach to online music course development may be of value.”⁷⁹

For future improvement of online education programs for music education, this study concludes with several recommendations for future improvement of online education programs for music education. Adi Pierewan writes that “learning should be fun for students because in these activities, there will be interaction between students, educators and learning resources in a

⁷⁸ Laura Ingerham, "Interactivity in the Online Learning Environment: A Study of Users of the North Carolina Virtual Public School," *Quarterly Review of Distance Education* Vol. 13, no. 2 (2012): 67, accessed May 2022, <http://ezproxy.liberty.edu/login?url=https%3A%2F%2Fwww.proquest.com%2Fscholarly-journals%2Finteractivity-online-learning-environment-study%2Fdocview%2F1283786995%2Fse-2%3Faccountid%3D12085>.

⁷⁹ Dan M. Little, “Characteristics of Online Music Courses: A Survey of Music Faculty,” (DMA diss., University of Houston, 2018), 66.

learning environment.”⁸⁰ One recommendation has an emphasis on improving social skills development in virtual learning modules and curriculum design. Sarah Parsons writes that “how well we engage a learning community through the power and potential of the web will be determined by our efforts to foster new ideas and techniques and create electronic campus climates that will cultivate positive and effective learning experiences.”⁸¹

Summary of Findings and Prior Research

The data suggests that the participants found their online music education courses to be moderately effective during the lockdowns with a Likert mean of 3.0. Although the scores display an overall medium score, there were some strengths and weaknesses of the online programs based on the participants results. As seen on Table 6, The creating and planning categories scored the highest respectively with a mean of 3.3 and 3.4. The performing and school board categories scored the lowest means of 2.7 and 2.8.

⁸⁰ Adi Cilik, Pierewan, et al, “21st Century Innovation in Music Education: Proceedings of the 1st International Conference of the Music Education Community,” *INTERCOME 2018*, (Netherlands, CRC Press, 2019): 137.

⁸¹ Sarah Parsons, Anne Leonard, and Peter Mitchell, "Virtual Environments for Social Skills Training: Comments from Two Adolescents with Autistic Spectrum Disorder," *Computers & Education* Vol. 47, No. 2 (2006): 186.

Table 6. Overall Survey Responses

Category	Mean Score	Attitude
Creating	3.3	Neutral
Performing	2.7	Neutral
Responding	3.0	Neutral
The Community	3.0	Neutral
The School Board	2.8	Neutral
Planning	3.4	Neutral
Overall	3.0	Neutral

82

Positive Results

The question “Our virtual music programs emphasize developing aural skills” had the highest mean score of 3.7 resulting in a positive attitude. Computers have been used for aural skills development for quite some time now, so this was a practice that was easily picked up by many students and teachers alike. This corresponds with what was discovered in the literature review in *Music Education with Digital Technology*. Finney writes that “music has long been at the forefront of technological advancement, with music educators harnessing its potential long before the advent of digital technology.”⁸³

Participants responded positively to the survey entry “I/my students have improved behavior and a better positive identity after participating in online music education” with a mean score of 3.5. Studies have shown that music helps students to express themselves and develop

⁸² Data from “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” study, Lafser, 2022-2023

⁸³ John Finney, *Music Education with Digital Technology*, (United Kingdom: Bloomsbury Publishing, 2007), 1.

confidence in traditional music classes. This finding correlates with Mozammel’s remarks in the literature review:

These studies have suggested that when students are confident of their abilities to overcome certain challenges and strive to achieve goals, it helps them to boost their performance targets. Therefore, with the ongoing COVID-19 situation whereby the learning is taking place online, it becomes important for students to express IT self-efficacy in order to secure their academic achievement.⁸⁴

The question “Our virtual course provided a positive climate for learning” yielded a mean score of 3.5 based on the participants responses. This is in disagreement with what was discovered in the literature review by Akombo, as she found that “there were more negative impacts of COVID-19 on music education than positive impacts.”⁸⁵ There is also disagreement with Price as she noted that “New skills, both practical and personal, were acquired, and the online experience proved a significant therapeutic environment for maintaining the sense of community and identity that group leaders and members cherish. From a purely musical perspective, it is evident that sadness and frustration clouded some group leaders’ impressions of the value of their contribution.”⁸⁶ The data from the respondents does match what is discussed in the literature review by Finney, who wrote that “Access to music technologies brings the potential to ensure self-realization and the realization of social solidarities and group

⁸⁴ Soleman Mozammel, Umair Ahmed, and Nawal Shakar, “COVID-19 and Online Learning: Critical Insights for Academic Achievements,” *Elementary Education Online* 20, no. 4, (2021): 1452, accessed July 2023, 10.17051/ilkonline.2021.04.166.

⁸⁵ Barbra Achando Akombo, “The Impact of COVID-19 on Music Pedagogy in Kenya: A Questionnaire Study,” *Lessons from Global Classrooms*, Vol. 1 (2022): 9.

⁸⁶ Sonia Price, Jes Phillips, Jacqueline Tallent, and Stephen Clift, “Singing Group Leaders’ Experiences of Online Singing Sessions during the COVID-19 Pandemic: A Rapid Survey,” *Journal of Music, Health and Wellbeing*, (2021): 21.

identities.”⁸⁷

Negative Results

The survey question “I/my students am/are personally invested in and take ownership of my/their learning” yielded the lowest mean score of the study with 2.1 putting it into the negative classification. This data suggests that not all online education programs have been able to be student-centered or fully collaborative. A recent study in Turkey discussed in the literature review describes the changes in education for music teachers during the pandemic. Kibici and Sarikaya found that some teachers did not openly embrace the sudden changes needed to teach online. Kibici and Sarikaya found that “significant differences were found in terms of gender, professional seniority and the type of school they worked at. In general, there are problems in music teachers’ readiness to learn.”⁸⁸

Another study referenced in the literature review proposed another possible reason for the lower scores for this question. Schnerer wrote that “One trend we are observing is that many school orchestra teachers—regardless of whether they are in fully online, hybrid, or in-person scenarios—are seeing their students less often during the pandemic due to scheduling adjustments.”⁸⁹

⁸⁷ John Finney, *Music Education with Digital Technology*, (United Kingdom: Bloomsbury Publishing, 2007) 2.

⁸⁸ Volkan Kibici and Muhsin Sarikaya, “Readiness Levels of Music Teachers for Online Learning During the COVID 19 Pandemic,” *International Journal of Technology in Education (IJTE)*, Vol. 4, No. 3, (2021): 510, accessed June 2023, <https://doi.org/10.46328/ijte.192>.

⁸⁹ Kathleen Schnerer and Michael Hopkins, “Motivating Orchestra Students During the Pandemic,” *American String Teacher*, Vol. 71, No. 1, (February 2021): 11, accessed on March 2023, [doi://10.1177/0003131320977358](https://doi.org/10.1177/0003131320977358).

The question “Our music education courses encouraged and supported student exhibitions and performances for community audiences” resulted with a mean score of 2.4 placing it in the negative category for attitude. The data suggests there was not a strong effort made in this area in course planning. In most cases this is due to the nature of the lockdowns but was also dependent on the success of the technological tools. Many online music courses in some areas during the lockdown provided no opportunity for performances. The effects of the lack of performance have been found in the literature review of *Aesthetic Education and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online?* as Danijela Mihailovic wrote:

The problem resulting from the lack of live performances with fellow students or professors, particularly in the field of solo performances or chamber music, as well as the inability to reach a full experience of music (“it is impossible to hear and experience everything in the proper way, because there is no face-to-face teaching”) stood out as a significant anomaly of online teaching.⁹⁰

The answer to the first research question is confirmed in Hypotheses 1:

RQ1: In what ways does the musical and academic development of music students who engage in 100% online learning differ from students in the classroom?

H1: Students who only engage in online learning for music and performance instruction may not achieve the same levels of musical and academic achievement as students in the classroom due to the differences in personal interaction with technology.

⁹⁰ Danijela Zdravic Mihailovic, “Aesthetic Education and the Aesthetic Experience of Music in New Modes of Teaching: Can Music be Taught Online?” *Facta Universitatis, Series: Philosophy, Sociology, Psychology and History*, Vol. 20, No 1, (2021): 94, accessed March 2023, <https://doi.org/10.22190/FUPSPH2101087Z>.

The answer to the second research question is confirmed in Hypotheses 2:

RQ2: What are some teaching techniques in music education that could be implemented in online education to ease greater musical and academic achievement?

H2: Some techniques that can be implemented in online education to help musical and academic achievement in music education could be increasing synchronous live instruction, increase movement and handwriting, and organization of online course material. If students engage only in online education for music education instruction and performance, some techniques and technological developments will need to be made to existing programs to ease the students' musical and academic based on current research in the field.

Limitations

This study had a lower-than-expected response rate so the results may not necessarily represent many teachers, students, and parents. Other analyses of this data are limited based on the understanding levels of technology of the participants. The screening survey only sought to determine if participants were qualified to take part in the survey, but not into the previous training participants may have received prior to the lockdowns. Following an analysis of the data compiled from the survey, it was found that some questions may have limited the participants' responses. Although no one mentioned a specific question, one participant remarked that "If I answered neutral it wasn't because I have a neutral opinion. It was because my anecdotal evidence suggests positive and negative outcomes, depending on individual situations." Another

limitation is due to the geographical locations of the participants. Many of the participants were engaged in a variety of different online programs and some were ready and well equipped for the lockdowns. Some programs were not. Since participants partook in an unknown number of differentiating courses, there may be a bias based on how strong the program each participant was involved in.

Recommendations for Future Study

Based on the data provided from the participants responses on the survey and the research from the literature review, there are a few recommendations for future study that can help develop online music education programs. Students need to be personally invested in and take ownership of their learning. This can be achieved by tailoring the online courses to be more student-centered or fully collaborative, as opposed to an online ‘one student fits all’ course.

Student exhibitions and performances for community audiences need to take place in an online format when not available for in person engagements. Many online music courses in some areas during the lockdown provided no opportunity for performances. This can be achieved by adding engagement time in planning by both teachers and the school board for tools used for online performances, you tube, teams, and a variety of other online applications. Future studies based on an online music education course that consists of more performance opportunities will show an increase in musical and academic achievement of the students. Future studies should also survey the community regarding student online performances.

There is a need for studies with a similar survey for more similar groups of participants. A teacher can administer the survey to only students for clear instant feedback to help develop their curriculum. Supervisors can administer the survey to teachers to make comparisons on the

musical and academic achievement of different online programs.

More studies should be conducted about the use of technology in online music education programs. If technology becomes a barrier for students in an online music course, they will not achieve musical or academic achievement equal to those who attend school in person.

Another recommendation for study is to monitor the aural skills development in online courses as technology progresses in the future. The increase of technological aids in online music education courses should also continue to be studied to determine if students continue to achieve higher levels of behavior and self-improvement.

Implications for Practice

The data of this study suggests that the musical and academic development of music students who engage in 100% online learning is comparable to those engaged in classroom studies. The categories of creating and planning scored higher for online programs. The data suggests that online programs are more effective than in classroom courses for developing aural skills, a better positive identity, and a more positive climate for learning. The categories of performing and the school board scored lower for online music education programs. The data suggests that in classroom courses are stronger in the areas of students taking ownership in their learning and when it comes to encouragement and support for student exhibitions and performances for community audiences.

There are some techniques in music education that could be implemented in online education to ease greater musical and academic achievement. Online programs need to focus on student-centered performances that are partially directed by the students themselves. This gives them a sense of ownership and creation in the process of the performance. If programs are

lacking in the areas of performance, they should slow down the delivery of material in the curriculum to allow for more performance opportunities. The flexibility that online teaching can give teachers can help to further connect with their students at times. Leon de Bruin explores some benefits of online learning from the literature review with:

The teachers slowed down the pace of delivery as teachers realized the benefits of spending more time enquiring about student learning rather than quickly assuming it and moving on. This allowed time for students to be more purposeful in their language and to articulate their reasoning and thinking behind their answers.⁹¹

Teachers need to be instructed on using online platforms for live performances if they do not have the technical knowledge. By increasing synchronous live instruction, involving the use of the other senses, increasing movement and handwriting, and performance opportunities, online music education programs can perhaps even excel over traditional performances. If students engage only in online education for music education instruction and performance, some techniques and technological developments will need to be made to existing programs to ease the students' social development based on current research in the field. This correlates to Perry in the literature review, who wrote that "in examining how we teach our students through music; we see today's music industry and our ensemble classroom activities have become increasingly disconnected."⁹² There was not much that could be done for in person performances due to the lockdowns, but programs may even be able to conduct juries, small group ensemble and solo performances in which non-participating students can engage in active listening exercises.

⁹¹ Leon R. de Bruin, "Instrumental Music Educators in a COVID Landscape: A Reassertion of Relationality and Connection in Teaching Practice," *Frontiers in Psychology*, Vol. 11, (2021): DOI: 10.3389/fpsyg.2020.624717.

⁹² Peter J. Perry, "Technology Tips for Ensemble Teachers," (United Kingdom: Oxford University Press, 2019) 3.

Summary

The data suggests that the participants found their online music education courses to be moderately effective during the lockdowns with a Likert mean of 3.0. Although the scores display an overall medium score, there were some strengths and weaknesses of the online programs based on the participants results.

The limitations of this study include a lower-than-expected response rate and limited knowledge on the understanding levels of technology of the participants. Following an analysis of the data compiled from the survey, it was found that some questions may have limited the participants' responses. Another limitation of the study is it is unknown how different the participants courses were and there may be a bias based on how strong the program each participant was involved in.

One recommendation proposed by this study is to tailor the online courses to be more student-centered or fully collaborative so that students are more personally invested in and take ownership of their learning. The results of this study recommend that student exhibitions and performances for community audiences need to take place in an online format when not available for in person engagements. There is a recommendation for future studies with similar surveys that are tailored to specific groups of participants to help in feedback and curriculum development.

The data of this study suggests that the musical and academic development of music students who engage in 100% online learning is comparable to those engaged in classroom studies. The categories of creating and planning scored higher for online programs. The data suggests that online programs are more effective than in classroom courses for developing aural

skills, a better positive identity, and a more positive climate for learning. The categories of performing and the school board scored lower for online music education programs. The data suggests that in classroom courses are stronger in the areas of students taking ownership in their learning and when it comes to encouragement and support for student exhibitions and performances for community audiences.

This study provides some implications for practice that can bring areas of current online programs up to a higher standard. Online programs need to focus on student-centered performances. If programs are lacking in the areas of performance, they should slow down the delivery of material in the curriculum to allow for more performance opportunities. Teachers need to be instructed on using online platforms for live performances if they do not have the technical knowledge to achieve the same results for musical and academic achievement in online music education.

Students who only engage in online learning for music and performance instruction do not achieve the same levels of musical and academic achievement as students in the classroom due to the differences in personal interaction with technology. Techniques that can be implemented in online education to help musical and academic achievement in music education are increasing synchronous live instruction, increase movement and handwriting, and organization of online course material.

Appendix A: IRB Approval

Consent

Title of the Project: The Effectiveness of K-12 Online Music Education During the COVID-19 Lockdown

Principal Investigator: Christopher Lafser, Doctoral Candidate, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be at least 18 years old, and were yourself or had a child engaged in online music education in the last three years as a student, teacher, or supervisor. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to identify the disadvantages of virtual learning for music and academic achievement in music instrumental courses. This study will explore the impact these disadvantages have on students and what techniques can be used to overcome these disadvantages. This study will provide recommendations for online music education curriculum development with an emphasis on improving the social skills development of the students to bridge the gap with students who study in the classroom.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. Fill out an anonymous online survey. The total amount of time for the survey should be approximately 45 minutes.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include that this research will contribute to further development of online music education programs and their overall effectiveness.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will remain anonymous.
- All data collected will be stored on an encrypted drive. All data collected will be deleted after three years.

Liberty University
IRB-FY22-23-74
Approved on 9-21-2022

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Christopher Lafser. You may ask any questions you have now. If you have questions later, you are encouraged to contact him at [REDACTED] or [REDACTED]. You may also contact the researcher's faculty sponsor, Dr. Rebecca Watson, at [REDACTED].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. You can print a copy of the document for your records. If you have any questions about the study later, you can contact the researcher using the information provided above.

Liberty University
IRB-FY22-23-74
Approved on 9-21-2022

Appendix B: Recruitment Post

ATTENTION POTENTIAL PARTICIPANTS: As a graduate student in the School of Music at Liberty University, I am conducting research as part of the requirements for a doctoral degree in music education. The title of my research project is “The Effectiveness of K-12 Online Music Education During the COVID 19 Lockdown” and the purpose of my research is to identify the disadvantages of virtual learning for music and academic achievement in music instrumental courses for future curriculum development.

If you are at least 18 years old, and if you or your child engaged in online music education in the last three years as a student, teacher, or supervisor, and are willing to participate, you will be asked to complete a brief online survey. It should take approximately 45 minutes for you to complete the procedure listed. Your participation will be completely anonymous, and no personal, identifying information will be collected.

To participate, go to

<https://docs.google.com/forms/d/e/1FAIpQLSeh2Nxx8ApPyqB1h0YTb4v6GihI6ViV34PzrqdVmT5Fa4NVrw/viewform> to complete the survey.

A consent document is provided as the first page you will see after you click on the survey link. The consent document contains additional information about my research. Please click on the survey link at the end of the consent information to indicate that you have read the consent information and would like to take part in the survey.

Sincerely,

Christopher Lafser
Doctoral Candidate

Appendix C: Screening Survey

1. Have you or your child engaged in online music education in the last three years?
Yes
No
2. Have you taught an online music program in the last three years?
Yes
No
3. Have you supervised online music education programs within the last three years?
Yes
No
4. Are you at least 18 years of age?
Yes
No

(An answer of no for all questions, or an answer of no for question four will exclude the participant from the survey.)

Appendix D: Questionnaire

1. Students displayed overall improvement on their instrument after online music education courses.

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

2. The virtual music education courses expose students to a diverse selection of musical traditions and styles from a variety of historic and social contexts.

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

3. Our virtual music programs helped students create and express their own musical ideas alone and in groups.

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

4. Our virtual music programs emphasize developing aural skills.

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

5. Our virtual music education courses are inclusive, allowing all students an opportunity to participate.

- Strongly agree
- Agree
- No opinion
- Disagree
- Strongly disagree

6. Our virtual course provided a positive climate for learning.

- Strongly agree
- Agree
- No opinion
- Disagree

Strongly disagree

7. I/my students was/were able to incorporate digital technologies for studying and music-making in an effective manner.

Strongly agree

Agree

No opinion

Disagree

Strongly disagree

8. Our virtual programs facilitated the development of positive interactions, teamwork, and problem solving.

Strongly agree

Agree

No opinion

Disagree

Strongly disagree

9. I/my students have an easier time concentrating in online music courses than in person.

Strongly agree

Agree

No opinion

Disagree

Strongly disagree

10. Our music education courses encouraged and supported active parent and community involvement.

Strongly agree

Agree

No opinion

Disagree

Strongly disagree

11. Our music education courses encouraged and supported arts faculty involvement in community arts events.

Strongly agree

Agree

No opinion

Disagree

Strongly disagree

12. Our music education courses encouraged and supported student exhibitions and performances for community audiences.

Strongly agree

Agree

No opinion

Disagree
 Strongly disagree

13. The community was actively engaged within the schools and the online music programs.

Strongly agree
 Agree
 No opinion
 Disagree
 Strongly disagree

14. Our music education program was treated equally with other subject areas.

Strongly agree
 Agree
 No opinion
 Disagree
 Strongly disagree

15. An adequate amount of resources was allocated to facilitate our virtual music education courses.

Strongly agree
 Agree
 No opinion
 Disagree
 Strongly disagree

16. Our virtual music education courses create an environment of excellence that encourages both teachers and students to aspire to professional levels of performance.

Strongly agree
 Agree
 No opinion
 Disagree
 Strongly disagree

17. I/my students am/are personally invested in and take ownership of my/their learning.

Strongly agree
 Agree
 No opinion
 Disagree
 Strongly disagree

18. I/my students have improved behavior and a better positive identity after participating in online music education.

Strongly agree
 Agree
 No opinion
 Disagree

%o Strongly disagree

19. Our music education courses have a comprehensive vision and implementation plan.

%o Strongly agree

%o Agree

%o No opinion

%o Disagree

%o Strongly disagree

20. Our online music education courses monitored student progress and provided feedback.

%o Strongly agree

%o Agree

%o No opinion

%o Disagree

%o Strongly disagree

21. Our music education program has an appropriate student-to-teacher ratio.

%o Strongly agree

%o Agree

%o No opinion

%o Disagree

%o Strongly disagree

22. I/my students achieved the outlined music learning outcomes of the virtual program.

%o Strongly agree

%o Agree

%o No opinion

%o Disagree

%o Strongly disagree

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